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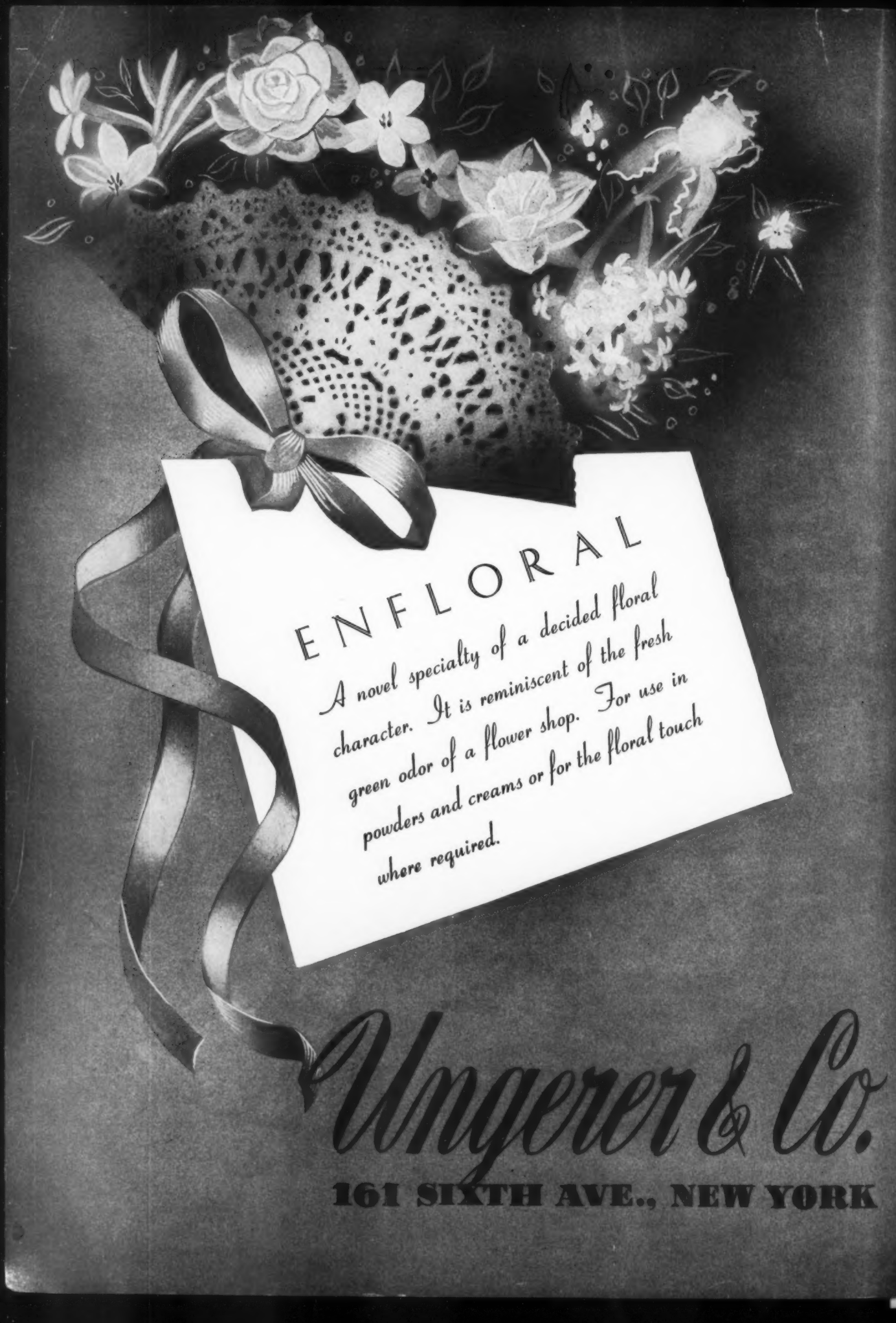
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COSMETICS · SOAPS · FLAVORS

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Editorial Comment

Post-War Planning

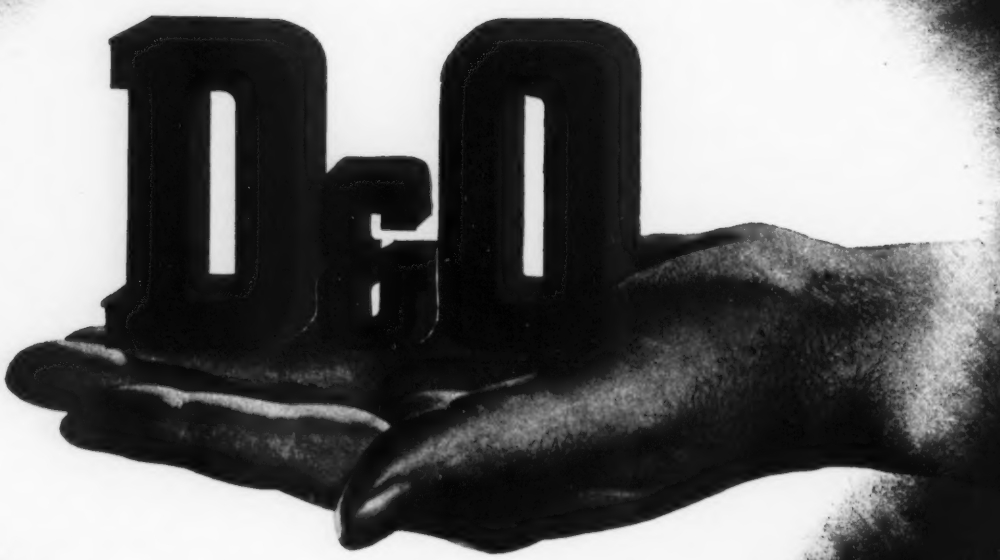
The course of our return to peacetime operations has been lengthened beyond estimation by the recent reverses in the European theatre, or so say many of our more articulate commentators. Whether this is true or not does not lie within the scope of this column to discuss.

If it is true, plans made by this industry will have to be deferred just that much longer before they can be put into operation. However, the deferment should not dull our thinking to the fact that they are essential to a healthy condition.

At a meeting of the Perfumery and Toilet Preparations Manufacturers' Section of the London Chamber of Commerce, held in London, in November, there was apparent a clear realization on the part of those present that competition will be great in the export field. There was further evidenced a feeling not to let any other country assume leadership through their default.

While it is still too early to have any idea of how the situation may develop, it is possible that competition of another nature may become apparent in a Europe at peace. Those countries producing floral essences may show preferential treatment to houses within their own borders. It is natural to expect that France and Germany will reach out avidly for the export trade of rich markets such as South America. While at this time only speculation is possible, it is not illogical to take such events into consideration.

With the return of materials and manpower without restriction the one limiting factor to production will be distribution. This means not only the mechanical system of disposing of merchandise, but the sale as it is originally made, meaning, essentially, advertising. Some other industries have had the accusing finger of inefficiency pointed at them, but any individual firm in this field which is inefficient in operation cannot live for long. There are too many good operators to permit such slackness.



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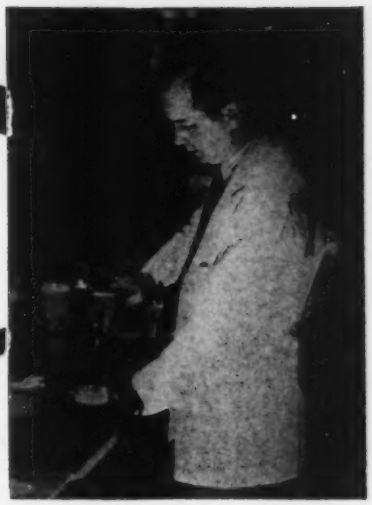
Desiderata

by MAISON G. DeNAVARRE



M. G. DeNavarre at work in his laboratory

WITH several large companies developing antiperspirants of one kind or another, comes the question of which is best. Talking with one technician, the statement was made in essence that his company has tried everything conceivable and that they had the best product. His stand is as it should be out of loyalty to his company. But comes the matter of how good is *best*. None of the antiperspirants work for more than a few hours under controlled conditions, insofar as retarding the flow of perspiration. They all work for several days in retarding body odor, even in the hottest season, if they contain 15% or more of aluminum sulfate or its equivalent of other active astringent. Everything resolves itself around the buffer. Even the best buffer—urea, has much against it, for it causes crystallization to take place. In addition, it makes the finished antiperspirant very sticky to use.

Therefore, attempting to make a *strong* antiperspirant with say 20% of aluminum sulfate, may be actually defeating the purpose. Make it weaker and it will work as well for it like the stronger product, will have to be used daily for any antiperspirant effect. The reasoning is easy. During the summer, those fastidious enough to use an antiperspirant will bathe daily. If they bathe this often, they will have to use the antiperspirant daily. So what is gained by using a stronger product? People too are thinking along this line, and that undoubtedly makes it possible for straight deodorants to continue doing so large a volume of business.

SUBSTITUTES

Don't be guilty of junking substitutes too soon. There is plenty to worry about and for a long time to come. For Americans tend to slide along, doing a bit of wishful thinking—a few things break in our favor, and we think the war is over. If your substitute is performing satisfactorily, better shift back to normal slowly, or you may get caught short when our excitement under reverses, causes our thinking pendulum to swing back a bit farther than necessary, with curtailments right and left. There is a new day coming, but the dawn of it, unfortunately, isn't here yet.

DRUM FUNNEL

Usually, the trouble comes in getting things out of drums. Unless the right kind of pump is available, a loss results. But occasionally you want to get things into drums, especially in a horizontal position. A special funnel has been made that makes the job an easy one. A heavy clamp holds the funnel in place by hooking on the drum chime. Then all you have to do is to pour directly into the drum.

GERANIUM LIKE

A lot of unusual esters are being made from cyclohexane. One of the recent ones is phenyl cyclohexane, having a geranium like odor. Undoubtedly you can get some special effects with it, although at the moment the supplies are probably limited.

CAKE MAKE-UP HUMECTANT

The proper choice of humectant for cake make-up has been a major problem. The requirements vary with the formula. A material that has had wide use in other cosmetic preparations is now being offered for this purpose. It is claimed to have advantages over propylene glycol and glycerine.

NAIL POLISH—NEW TRENDS

That solvents such as the hydrocarbons, esters like ethyl acetate or other acetates, ketones like acetone dry out nails and cause them to be brittle is well known. Some have overcome the drying in part. But so long as the nail enamels are based on present conceptions, it will not be overcome.

Even alcohol is drying, but far less drying than the other more active solvents. Nail enamels using alcohol as the solvent can be devised, especially with the advent of some new plastic resins that are alcohol soluble —readily. Maybe one can dispense with established plasticizers which are also sensitizers, and use ingredients such as say cetyl alcohol or its ethers. No polish lasts as long as it is advertised to last, and patching of one kind or another or even a new application must be made. If the polish is not drying, and the remover used to take it off doesn't dehydrate, then ladies won't mind putting it on a couple of times a week, especially since so much of it is applied on the boss's time. There is something to think about here . . . and it will be done before long too.

PORTABLE SCALE

The need of a scale with both metric and avoirdupois dial has long been felt. Nothing was done about

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it. You had to have two scales or two sets of weights. With the trend toward the metric system now more than ever, one company has devised such a dial and built a portable scale around it. It is so built that a true weight is obtained whether level or not. A locking device for the tare beam lever protects the scale when not in use. Variations of this scale are available too.

VOLUMETRIC SOLUTIONS

Another company now offers standardized volumetric solutions in ampoules holding 50 cc, which when diluted to one liter give the proper normality. A variety is available. I mention this since several enquiries have come in for the information.

TEMPERATURE INDICATORS

A number of years ago, it was mentioned in this column that the chemicals devised by a particular European company would find many practical uses. These chemicals change color at definite temperatures, returning to their original color on cooling. One company offers these as pellets resembling an aspirin tablet, a liquid paint that may be applied with a brush and as a pencil that can be used for marking. Batches need not overheat or get cold any longer, for properly used, the change in temperature is readily observed at a long distance.

NEW DETERGENT

A new material that works in the presence of soap and in salt water is offered for military purposes, with wide possibilities after hostilities cease. It is a sulfonated produce derived from petroleum. It is reputed to be especially good for shaving purposes.

CORRECT CLOSURE TIGHTNESS

To determine the correctness of closure tightness, a torque wrench is devised that checks this to plus or minus 2% of the established standard. If used in sealing all containers, the wrench will guarantee an equal degree of tightness. When the proper torque load is reached, an audible click is transmitted by a blunt plunger.

QUESTIONS AND ANSWERS

531. WICK TYPE DEODORANT

Q: *We are anxious to put out a deodorant liquid similar to "Air Wick," "Air Fresh" or "Fragrant Air." We have some formulas on hand, but do not think they are modern. We would prefer a product without perfume. Any information you can give will be appreciated. We derive much from your technical columns and enclose a self-addressed, stamped envelope for your convenience.*

H. J. L.—TENNESSEE

A: The Air Wick formulation is covered by U. S. Patent No. 2,326,-672. The patent disclosure indicates a composition containing three parts of Chlorophyll, 16 parts Formaldehyde (40 per cent) in a vehicle containing alcohol and water. Recent samples on the market are no longer clear, but are emulsified and as a result may contain less, or no alcohol at all. We are not acquainted with the other products, but as has been suggested in this column before, the deodorizing properties of formaldehyde have been well known and the theatrical spray, so-called, formulated from 4 ounces of 40 per cent Formaldehyde Solution to a gallon of finished lotion, suitably perfumed, is an excellent base for such a deodorant. Alcohol will undoubtedly aid in evaporation. A solubilizer for the perfume may also be indicated if your alcohol content is too low to keep the perfume in solution.

532. AFTER SHAVE CREAM

Q: *We would thank you if you are kind enough to send us a good formula for what is known as "Mentholated, Greaseless Cream" for after shaving.*

G. M.—PANAMA

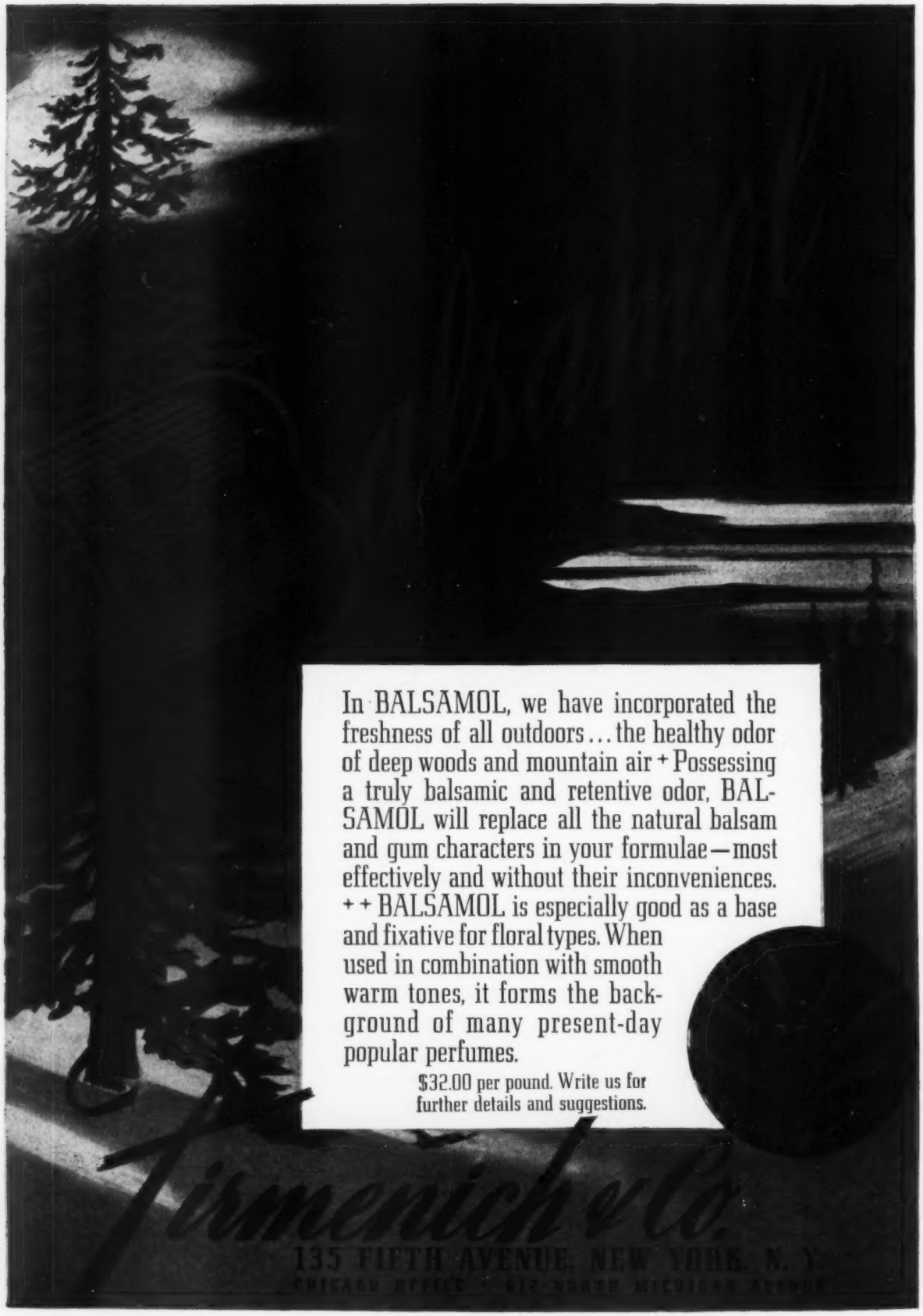
A: Under separate cover we are sending you the names of several well-known firms who may want to be represented in Panama as requested in one portion of your letter. The following formula will give you a mentholated greaseless after shave cream: Glyceryl Mono Stearate 15 parts, Propylene Glycol 5 parts, Spermaceti 3 parts, water to make 100 parts, menthol, preservative, perfume and color, q.s. Place all the ingredients, excepting the perfume, color and menthol, into a kettle and bring to 70°C. Agitate slowly until the product has cooled to 45°C. Dissolve the menthol in the perfume and add to the mass, followed by the color. To make a whiter cream, add 1 per cent titanium dioxide. Ordinarily, such creams do not contain more than 0.1 per cent menthol in the finished product.

533. BUFFER FOR ANTIPERSPIRANT

Q: *Please give us the name of a suitable buffer and the amount to use in an antiperspirant cream containing 15 per cent aluminum sulfate.*

B. L.—NEW JERSEY

A: The only buffers that we know of are already patented, and obviously there would be an infringement if you used these materials in your product. The use of urea is covered by U. S. Patent No. 2,236,387. This patent has once been litigated. Three other patents, Nos. 2,230,082-3-4 cover a variety of nitrogen derivatives, including urea, amides, urethanes, nitriles and imids in combination with astringent aluminum compounds, such as the chloride or sulfate. More recently, patent No. 2,350,047 covers the use of alkali metal oxides or carbonates, such as those of zinc, magnesium or aluminum in combination with aluminum chloride or sulfate. The formates have also been used as buffers, and are covered by U. S. patents No. 2,210,013-4. While there may be a question about the validity of some of these patents, any work you do must be done in the light of existing patents. The important thing to remember in buffering aluminum salts for antiperspirant use is to retain the antiperspirant properties after preventing rotting of textile fabrics.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Methylcellulose in the Cosmetic Industry

Water soluble methylcellulose, although a comparatively newly-manufactured product of the United States, has found an important place in a large group of industries

by A. E. YOUNG
The Dow Chemical Company, Midland, Michigan

WATER soluble methylcellulose is now a well-known commercial product. Actually, it is only one of several possible methylcelluloses. Methylcellulose is manufactured by reacting cellulose, caustic soda and methyl chloride. By suitable choice of conditions of reaction and ratio of reactants it is possible to obtain products containing a wide range of methoxyl substituent. Methylcelluloses containing low percentages of methoxyl groups may be found to be soluble in 8 per cent caustic soda solution after freezing the mixture. Products containing somewhat higher percentages of methoxyl groups are soluble in aqueous caustic soda at room temperatures, while yet more highly substituted methylcelluloses are soluble in water. Alkali soluble methylcellulose has been manufactured and sold in Germany under the name Tylose 4S, but has not been widely used in the United States. Here attention has been devoted almost entirely to water soluble methylcellulose because of its utility in a large group of industries, including the drug and cosmetic industry and the paper, paint, textile and leather industries.

NEWLY MANUFACTURED IN UNITED STATES

Water soluble methylcellulose was first produced commercially in Germany. Its manufacture was started in the United States a few years ago; and it is now being sold under the trade name of Methocel. This product approaches closely in composition to dimethylcellulose. This article is concerned with the properties and uses of such dimethylcellulose and its solutions.

PHYSICAL PROPERTIES

The physical form of methylcellulose is that of a white, fibrous product, not unlike cotton linters in appearance. On dissolving in water methylcellulose forms a viscous solution and when this solution is spread on a flat surface and the water allowed to evaporate, a strong, transparent film is produced. These properties of thickening of aqueous solutions, and of film forming are the basis of the ability of methylcellulose.

Methylcellulose is soluble in cold water but it is not soluble in hot water or in saturated salt solutions. It is insoluble in most organic solvents and is unaffected by oily or greasy materials of animal, vegetable or mineral origin.

Methylcellulose solutions are most readily prepared[1] by mixing the fibrous solid with approximately half the required water at boiling temperature in order to wet the fibers thoroughly. After allowing to soak for 20 to 30 minutes the remainder of the required water is added either as cold water or as ice. The mixture is then

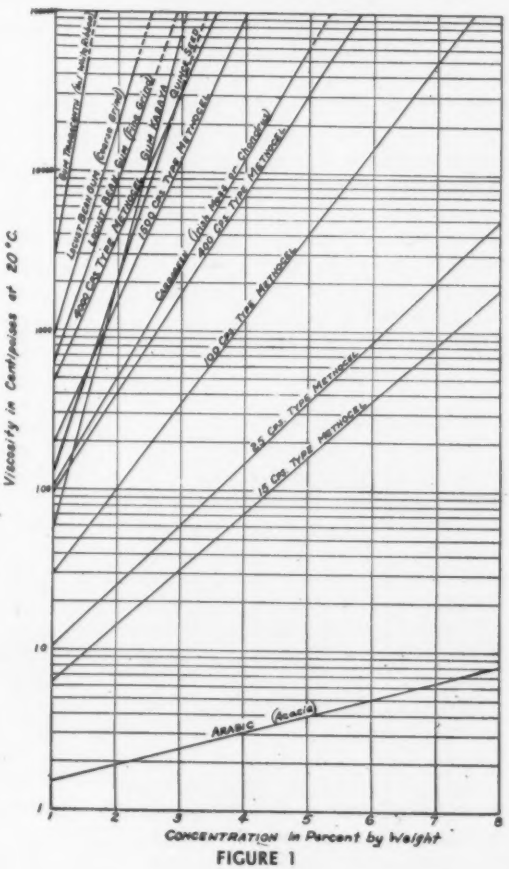
Viscosity in Centipoises at 20 °C.
Concentration in Percent by Weight
4000 Cps. Type Methocel
400 Cps. Type Methocel
100 Cps. Type Methocel
25 Cps. Type Methocel
15 Cps. Type Methocel
Arabic (Acacia)

FIGURE 1

cooled (if necessary) to room temperature or below and stirred until smooth. Smooth, homogeneous solutions are obtained more quickly if the temperature of the solution is reduced to 5-10°C.

Methylcellulose is manufactured under carefully controlled conditions as a series of six types of different intrinsic viscosity of 2 per cent solutions in water at 20°C. Thus 2 per cent aqueous solutions of the six types possess viscosities of approximately 15, 25, 100, 400, 1500 and 4000 centipoises respectively. The six products provide a wide range of solution viscosities at any given concentration of Methocel in solution, and thus enable choice of the proper balance between solids content and viscosity for practically any application. The relationship between viscosity and concentration for each of the viscosity types of methylcellulose is shown by Figure 1. This figure shows that methylcellulose solutions increase very rapidly in viscosity as the concentration is increased.

When a cold solution of methylcellulose is warmed, solution viscosity decreased as is shown by Figure 2. Eventually, a temperature is reached at which a sudden increase in viscosity occurs. Within the range of a very few degrees, the solution becomes transformed into a gel.[2, 3] This gelation temperature is dependent upon the concentration of methylcellulose in the solution and upon the viscosity type of the methylcellulose used. In general, the greater the concentration of methylcellulose or the higher the viscosity type the lower will be the temperature at which gelation occurs. Gelation temperature is also affected by small concentrations of soluble salts. The effect is caused almost entirely by anions, some of which have a greater effect than others. Thus thiocyanates and iodides raise the gelation temperature, while nitrates, bromides, chlorides, acetates, tartrates and sulfates reduce it. Nitrates bring about the smallest amount of increase and sulfates the most; the effect of other anions falling into intermediate positions in the order listed. Addition of some soluble salts, in sufficient quantity to methylcellulose solutions will cause actual precipitation of the cellulose ether. The solutions will tolerate large quantities of univalent ions such as thiocyanates, iodides, bromides and chlorides. However, the presence of smaller amounts of polyvalent ions such as carbonate, sulfate or phosphate will cause precipitation. Methylcellulose solutions are unaffected by addition of dilute acids, alkalis or most water soluble resins and wetting agents. A change in pH of a solution of methylcellulose, through the range of 2 to 12 will cause no apparent change in solution viscosity, color, solubility or surface tension properties of the solution.

Although the tendency of methylcellulose solutions to gel on heating and their sensitivity to certain salts impose some limitations on the use of methylcellulose as a thickener, nevertheless its utility remains wide. Many of its advantages are apparent through comparison with the natural, water dispersible gums such as are commonly used as thickeners for aqueous systems. The advantages of methylcellulose over such gums may be listed as:

1. Methylcellulose is a synthetic chemical product which is uniform in composition and thickening power from batch to batch.
2. Methylcellulose is completely soluble in water and contains no dirt or foreign material.
3. Methylcellulose solutions ordinarily do not require preservatives as they are resistant to mold growth.
4. Methylcellulose solutions are entirely neutral in contrast with the acid reaction shown by most gums.
5. Methylcellulose solutions are infinitely compatible with alcohol.
6. Methylcellulose solutions are stable and hence retain their viscosity under a wide range of conditions, including long aging.

The approximate amounts of any one of the various viscosity types of methylcellulose required to match the viscosities produced by the more common water dispersible natural gums may be determined by reference to Figure 1. In this figure, the viscosity designation in centipoises on the left hand vertical scale indicates the relative amount of body derived from the thickening agent at any concentration from 1 to 8 per cent by weight. The scale used comprises a range of 1 to 100,000 centipoises. A viscosity of one centipoise is the approximate viscosity of pure water at 20°C. while viscosities of much more than 100,000 centipoises are practically impossible to determine by flow methods since they are beginning to approach a semi-solid state.

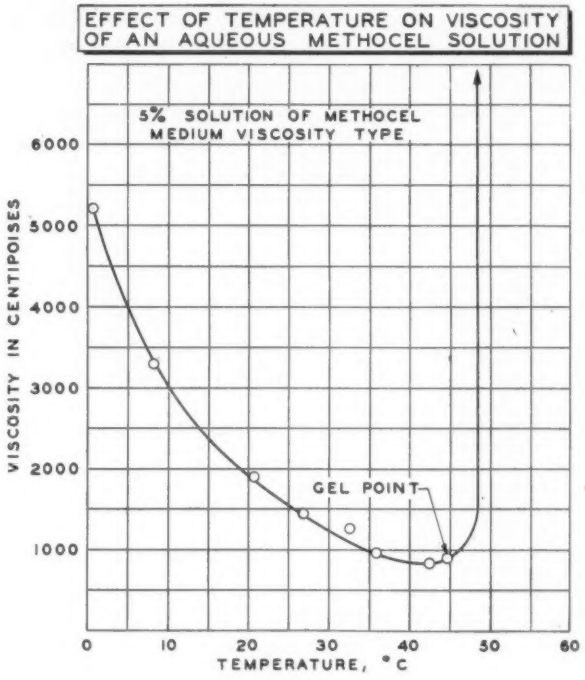

FIGURE 2

Experiments have been conducted on both animals[4, 5] and humans[6] to determine if the margin of safety in the use of methylcellulose in food and drug products is entirely satisfactory. These experiments have shown that laboratory animals can be maintained in excellent health on diets containing large quantities of methylcellulose. It was also found that when methylcellulose is administered in single oral doses (10g.) to human subjects practically all of the methoxyl ingested can be recovered from the feces, irrespective of the nature of the diet of the subject. No ill effects were noted in any of the human subjects who received methylcellulose. It is evident, therefore, that there is no reason why methylcellulose should not be widely used in the food and drug industries.

Methylcellulose is used in the cosmetic and pharmaceutical industries principally as a binding, thickening, dispersing and emulsion stabilizing agent.[7, 8, 9, 10, 11, 12] Specifically it has been used in the preparation of gumless lotions, hand and face creams [7, 13, 14] hair dressings, depilatory creams,[7, 8] ointments,[15] toothpastes, [7, 16, 17] liquid dentifrices,[7, 17] leg make-up,[26] and wave set lotions,[7] in making water paints,[21] white shoe cleaner, and in preparing emulsions of fatty,[22] mineral[23] and essential oils.[11] The outstanding film forming properties of methylcellulose are utilized in manufacture of methylcellulose coated, greaseproof paper.[24] These coatings, while extremely thin, are continuous, and therefore, provide a continuous barrier to penetration by greases and oils. Yet thinner, discontinuous coatings or sizes serve to impede the penetration of inks into boxboard, and similar absorbent paper products, and thus enhance the gloss of the printing.

Free films of methylcellulose have been used as carriers for sulfa drugs.[25] The films serve as transparent, medicated bandages for burns and other wounds.

Combinations of methylcellulose with soaps or wetting agents are also sold in film form. This represents a convenient way of dispensing soap in individual portions for a single use.

BIBLIOGRAPHY

[1] Methocel. *The use of Methocel in Pharmaceutical and Cosmetic Preparations.* The Dow Chemical Co., Midland, Mich., 1942, Page 4.

[2] E. Heymann, Trans. Faraday Soc. **31,** 846, (1935).

[3] E. Heymann, Trans. Faraday Soc. **32,** 462, (1936).

[4] Deichmann and Witherup, J. Lab. and Chem. Med. **28,** 1725, (1943).

[5] Hulper Arch. Path. **33,** 1, (1942).

[6] Machle, Heyroth and Witherup, *J. Biol. Chem.* **153,** No. 2. 551, (1944).

[7] G. A. Bergy, *Am. Prof. Pharm.* **5,** 691, (1939)

[8] W. Meyer, *Suddant Apoth. Ztg.* **81,** 251, (1941).

[9] G. E. Osborn and H. G. DeKay, *J. Am. Pharm. Assoc. Practical Pharm. Ed.* II, 10, (1941).

[10] T. Deakers, *Drug and Cosmetic Ind.* **48, 2,** 152, (1941).

[11] J. H. Frydlender, *Revue des Prod. Chem.* **42,** 193 and 225, (1939).

[12] D. Schmaltz, *Pharm. Zentralblatt* **78,** 767, (1937).

[13] D. Schmaltz, *Seifens Ztg.* **67,** 44, (1940).

[14] J. M. Vallance, *Am. Perfumer,* Aug. 1940.

[15] Gershenfeld, *Am. Journ. Pharm.* **112,** 281, (1940).

[16] Gershenfeld, *Soap, Perfumery and Cosmetics* **14,** 42-5 (1941).

[17] Gershenfeld, *Drug and Cosmetic Ind.,* May 1941, p. 589.

[18] C. T. Small, *Chem. Ind.* **50,** 4, 504, (1942).

[19] W. Obst. *Kunstopper* **26,** 231, (1936).

[20] C. E. Osborn and H. G. DeKay, *J. Am. Phar. Assoc. Practical Pharm. Ed.* II 10, (1941).

[21] H. C. Cheetham and R. J. Meyers, U.S.P. 2.279,387.

[22] *Pharm. J.* **87,** 115, (1938).

[23] *Am. Pharm. Assoc. J.* **32,** 2, (1943).

[24] R. M. Upright and F. C. Peterson. *Paper Trade Journal,* **110,** 18, 245, (1940).

[25] K. L. Pickrell, *Bull. of Johns Hopkins Hosp.* **71,** 5, 304, (1942).

[26] M. G. deNavarre, *Am. Perfumer,* **46,** 4, 41, (1944).

Argentine Olive Oil

The comparatively new olive oil industry in Argentina continued to make progress in 1943 with a total output for the year of 169,087 gallons.

Cold Weather Mask

A new mask has been developed and recently standardized by the Quartermaster Corps. This mask is not to be confused with the recently developed cold weather hood for use in more temperated climates.

The mask takes the place of a face covering made of chamois, which was only partially made up, since the eye holes had to be cut into the masks by the soldiers themselves. At extremely cold temperatures, this type of mask did not offer sufficient protection against the freezing of the face. At 40 below zero F., with a ten mile per hour wind, an unprotected face will freeze in about a minute. The new mask was tested for more than 40 minutes in a temperature of 40 below zero with a 20 mile per hour wind with no discomfort to the wearer's face, and proved much warmer than the chamois mask.

The outer shell of the mask is composed of olive drab, 9-ounce wind resistant cotton sateen, which is also water repellent. The face, nose guard, and chin piece are lined with wool pile while the head piece is lined with felt. A shaped, movable flap may be raised at will, exposing the mouth and nose for eating, drinking and smoking.

The mask fits snugly to the face, fully protecting the under part of the chin, and runs well up over the forehead. It is fastened into place by ¾-inch webbing straps and buckles, two of which go around the head, while a third goes over the top. The eye holes fit snugly, facilitating the use of goggles. Procurement is expected to begin soon.

In rigid support of the paper conservation program of the War Production Board, the eleven publications of the Robbins Publishing Company, Inc., have exercised every feasible economy in weight of paper stock and distribution of sample copies. Advertisers and readers alike are asked to make wartime concessions; copies are scarce—after you have read this issue will you please share it with someone else.

French Essential Oils

T. W. Delehanty, head of the Drugs and Pharmaceutical Unit of the Bureau of Foreign and Domestic Commerce, Department of Commerce, released the following summary of the first preliminary report received from Lester A. Barber, Specialist in the Auxiliary Foreign Service Corps of the Department of State, now in Paris, who was detached temporarily from his duties as Assistant Chief of the Drugs and Pharmaceutical Unit, to report on the availability of essential oils which may be procured by the American industry in France. Mr. Barber left America shortly before the holidays, and is now in the Grasse region, personally surveying conditions and inspecting resources. Further reports from Barber will soon be made public by Chief T. W. Delehanty, on the joint account of the Department of Commerce and the Department of State. The text of Chief Delehanty's summary follows:

The ability of the French essential oils industry to export in pre-war volume to the United States is very uncertain and varies widely with respect to specific commodities, according to preliminary advice received by the Department of Commerce from its representative in France, Lester A. Barber, assistant chief, Drugs and Pharmaceutical Unit.

VOLUME OF EXPORT

French firms, which are branches of Grasse interests, the principal brokers handling essential oils and the largest producers of French perfumes, having subsidiary manufacturing enterprises in the United States, report that only 10 to 20 per cent of the floral oils normally required by this country will be available. They indicate that if alcohol, retail bottles and foreign essential oils were freely available, the French perfume industry would probably consume all of the Grasse production.

AVAILABILITY OF LAVENDER

Other equally well-informed French industry sources state that only a maximum of 50 per cent of United States requirements of lavender and

Chief T. W. Delehanty of the Drugs and Pharmaceutical Unit, Bureau of Foreign and Domestic Commerce

lavandine will be available. Some authorities are of the opinion that these two oils can be exported from France up to 100 per cent of United States needs. Other essential oils indigenous to France may be available up to a maximum of 50 per cent of our requirements, but the percentage will vary greatly on individual oils. The jasmin and rose crops have not yet been fully collected.

MANUFACTURERS FACE SHORTAGE

The Department further states that French perfume manufacturers face shortages, because the season has been one of crop and production deficits, due to diversion of female labor from flower gathering to better paid positions, and to the lack of coal, solvents and fertilizers. The entire cost of the full planting placed upon a 50 per cent harvest doubled the price. Furthermore, the cost of the flowers obtained from peasants was high, as no price limits have been imposed by the Government.

TRANSPORTATION FACILITIES

Since all conflicting statements in the preliminary reporting appear valid, a check will be made in the Grasse and lavender producing regions for clarification and evaluation of all data.

According to reports available to the Department of Commerce, none of the factories in Grasse were physically injured by the war. However, coal, solvents, labor, flowers and transportation facilities are greatly needed.

Essential Oils Exports

Both the quantity and value of citronella oil exports from Ceylon were higher during the first nine months of 1944 than in the corresponding period in 1943. Demand tended to slacken slightly during the third quarter.

During the first nine months of 1944, as compared with the corresponding period in 1943, the quantity of cinnamon-leaf oil exports declined, but the value increased, reflecting the rise in prices.

Exports of essential oils from Reunion during the third quarter of 1944 were as follows: Vetiver 10,789 kilograms, valued at 7,667,813 francs; geranium 19,582 kilograms, valued at 6,569,034 francs; and ylang-ylang, 662 kilograms, valued at 314,590 francs.

Camphor Production

A development recently carried out by the East African Agricultural Research Institute at Amani, Tanganyika, was the operation of a camphor factory at Luchoto for eighteen months, until the supply of camphor wood was exhausted, states the British press. During this time almost 61,400 pounds of crude solid camphor and 30,500 pounds of camphor oil were supplied to Great Britain.

Ginger Exports

Ginger in amounts equal to normal pre-war supply is anticipated by WFA during 1945 from West Africa, Jamaica, and India. The supply will be available to civilian importers. The import control has been removed from ginger root, ground and unground. American importers have been assured they will be able to secure the ginger through British exporters customarily dealing in spices, despite an original transaction by the West African Control Board under the supervision of the British Ministry of Food.

French Morocco Beeswax

Annual production of beeswax in French Morocco is about 2,000 tons. Authorities believe that this could be increased considerably.

Survey of American Eucalyptus Oils

Oil of eucalyptus citriodora and allied "perfume" eucalyptus oils . . . Method of planting, harvesting and distilling in Brazil, Guatemala and the United States

by DR. ERNEST GUENTHER

Chief Research Chemist, Fritzsche Brothers, Inc., New York, N. Y.

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SMALL quantities of this interesting oil, which contains 65 and more per cent of citronellal and is usually classified as a perfume eucalyptus oil, used to be produced in Australia, and shortly before World War II also in Java. Despite its merits, the oil never attained the recognition it really deserves mainly because of the ruinous competition by the very low-priced Java citronella oil which also contains citronellal. When Japan occupied the Dutch East Indies, the world was practically left without citronella oil Java type, except for small quantities from Guatemala, and the interest of our industry started to turn to the formerly neglected *eucalyptus citriodora.*

I. BRAZIL

Fortunately, Brazil for some time had been growing a considerable acreage of *eucalyptus citriodora,* especially along the Paulista Railway System, "Companhia Paulista de Estrada de Ferro," in the State of São Paulo. The tree had been introduced together with hundreds of other eucalyptus species and varieties by Dr. Navarro de Andrade, the former director of that progressive railway system, who planted eucalyptus for reforestation and fuel purposes. (See also Brazilian *eucalyptus globulus* oil.)

Eucalyptus citriodora grows fast, straight, and to a considerable height, so that the trunks can be used for building or as masts on small sailing vessels. When World War II caused the serious shortage of Java type citronella oil, the Brazilian soap, cosmetic and perfume manufacturers looked towards *eucalyptus citriodora* oil as an eminently suitable substitute, and many growers started to extend their plantations. As a result, hundreds of thousands of these trees have already been or are being planted at present. Since the sensitive root system of *eucalyptus citriodora* does not easily withstand transplanting, propagation should be done as follows:

Wooden pots two inches wide and four inches high are filled with good humus, and five to eight selected seeds planted. The seeds sprout after two to three weeks. When about four inches high, the earth containing the plants is set out into the field. As the young trees develop and grow, they are thinned out, the strong ones being left standing, the weaker ones removed.

Under the favorable climatic and soil conditions of São Paulo, *eucalyptus citriodora* may be exploited already one year after planting with an increased production during three to four years. On soil of medium fertility, sixteen to eighteen-month-old trees yield about eight kilos of leaves upon trimming, the leaves giving about 1.5 per cent of oil. This yield seems rather high; quite possibly this is due to the present young age of the trees. Other producers report yields of oil from semi-dried leaves of about 0.8 to 1.0 per cent. Figuring on a planting distance of 1 by 3 meters, one alqueire paulista (5.9 acres) will yield normally from 500 to 600 kilos of oil.

The whole industry is still quite young, therefore, exact figures are not yet available, but it seems that a planting can be cut (trimmed) for three or four successive years before it is exhausted.

The total production of Brazilian *eucalyptus citriodora* oil has now reached very approximately 10 tons for 1944-45, but will probably be doubled for the following year, if the demand warrants it.

Two samples of genuine Brazilian *eucalyptus citriodora* oils analyzed in the New York laboratories of Fritzsche Brothers, Inc., had these properties:

	I
Specific Gravity at 15° C.	0.867
Optical Rotation	+ 0° 47'
Refractive Index at 20° C.	1.4512
Citronellal Content (Hydroxylamine Method)	79.7%
Solubility at 20° C.	Soluble in 3.0 vols. and more of 70% alcohol.

	II
Specific Gravity at 15° C.	0.867
Optical Rotation	+ 1° 5'
Refractive Index at 20° C.	1.4515
Citronellal Content (Hydroxylamine Method)	74.6%
Solubility at 20° C.	Soluble in 3.0 vols. and more of 70% alcohol.

This prosperous Central American republic, too, has lately started to produce limited quantities (about 350 to 400 pounds) per month of *eucalyptus citriodora* oil. The plantings, located on the outskirts of Guatemala City, now comprise about 50,000 to 60,000 trees, but are being extended by another 10,000 trees.

The methods of planting, harvesting and distilling are the same as described under *eucalyptus globulus* oil. The yield of oil amounts to about 1.5 per cent.

A sample of *eucalyptus citriodora* oil distilled on those plantations and analyzed by Fritzsche Brothers, Inc., New York, had these properties:

Specific Gravity at 15°C.	0.863
Optical Rotation	+0°27'
Refractive Index at 20°C.	1.4512
Aldehyde Content, calculated as Citronellal	80.5%
Solubility	Soluble in 4.5 vol. and more of 70% alcohol.
Color	Practically colorless.

Courtesy, Rafael Pinol Batres

Eucalyptus Smithii tree with leaf growth a year old.

Courtesy, Rafael Pinol Batres

Eucalyptus citriodora, trunk cut to less than a yard from the ground.

The oil was normal and of excellent quality.

The same producer near Guatemala City has also started to grow *eucalyptus staigeriana*, the so-called lemon-scented Ironbark. The leaves yield about 2.6 per cent of oil, several hundred pounds of which have already been produced.

A sample of Guatemala *eucalyptus staigeriana* oil examined in the New York laboratories of Fritzsche Brothers, Inc., had these properties:

Specific Gravity at 25°C.	0.880
Optical Rotation	—31°36'
Refractive Index at 20°C.	1.4798
Citral Content (Neutral Sulfite Method)	31.2%
Ester Content, calculated as Geranyl Acetate	13.69%
Total Geraniol Content (calculated)	19.1%
Solubility	Hazy in 10 vol. of 70% alcohol. Clearly soluble in 0.5 vol. of 90% alcohol.

The oil had a very agreeable, somewhat lemon-like odor accompanied by a fruity note which recommends the employment of this oil in all kinds of flavors, perfumes, toilet preparations and in soaps.

III. UNITED STATES (CALIFORNIA)

The growing of *eucalyptus citriodora* in California is a rather novel experiment, as this tree does not stand cold temperatures, 28° F. being about the critical point. (The tree growing probably farthest north is located at Belvedere on the San Francisco Bay, at about 150 feet above sea level; it is about 60 feet high.) Therefore, *e. citriodora* has been planted only in the coastal areas of Southern California. So far there exist in California comparatively few citriodora trees, probably two or three thousand, as compared with several millions of *e. globulus*. For instance, three or four miles of *e. citriodora* trees have been planted along the curbs of Cajon Boulevard in San Diego City. These trees have grown very tall and are now beyond the economical pruning stage for any oil recovery. The only organized *e. citriodora* planting in California is located near Oceanside, but it consists of only one acre, the trees being planted at a distance of 8 by 8 feet. The leaf material is collected three times a year by cutting back the plants like hedges. It is planned to extend this acreage, provided the trade shows interest in *e. citriodora* oil and is willing to pay prices which will make production in California possible.

A California *e. citriodora* oil examined in the New York laboratories of Fritzsche Brothers, Inc., had these properties:

Specific Gravity at 15°C.	0.871
Optical Rotation	—1°7'
Refractive Index at 20°C.	1.4547
Citronellal Content	65.8%
Solubility at 20°C.	Opalescent in 3.0 to 3.5 vol. and more of 70% alcohol.
Color	Yellow.

Brazilian Mint Oil

According to the Secretariat of Agriculture, the production of mint oil in the state of São Paulo, Brazil, amounted to 300 tons for the 1943-44 season. Plantings for the 1944-45 season have been delayed from four to six weeks because of the unseasonal drought, but if rainfall is plentiful a harvest is anticipated for the 1944-45 season of 500 tons of oil or 250 tons of menthol.

Cosmetic Trends in the Middle West

Sales quotas deplete stockrooms of merchandise . . . National advertised brands move rapidly . . . Unusual attention given to cleansing and treatment creams

by JEAN MOWAT

DECEMBER cosmetic sales, from eye-lash curlers and nail buffers to treatment creams all carried an additional federal tax of ten per cent over the month in 1943 but no buyer could see that this was a factor. Sales quotas were so exceeded that many buyers are suffering a headache this month as stockrooms are cleared of all merchandise.

Trends for the future were not important, unless one considers the many calls registered for nail buffers and eye-lash curlers that may or may not have been for holiday gifts but which badgered buyers into a position to recognize that these are two items wanted. One large store in Chicago had a matter of six buffers, and no curlers. When this store gets down as low as that on merchandise it can be asumed that others are completely out. A check among six stores revealed not only no buffers; they could not be ordered. When the buyer of a popular priced store stated she had so many requests for nail buffers, many ordered by physicians for greater nail improvement, she was "stumped." These had not been in stock for many months. Few buyers, it was disclosed, had bothered about this item. Their major concern was obtaining merchandise for the great populace.

There is a very important trend which will develop as the Spring comes on and the nippy winds really get in their work. While this may not be as important in the south, where there is great humidity, it will still have an important bearing and the trend is VS Powder. Cake make-up in all its forms and ramifications has enjoyed great popularity. But buyers have had their salespeople delving into each sale of this form of powder and have in many instances been able to cap it with that of powder. During December when every cosmetic department buyer had been warned that the added FT of ten per cent might change the course of sales, a determined effort was made, and proved successful, to impress upon any consumer who purchased a cake of the powderform to be also sold a box of powder. And additional information as to the importance of a clean, fresh skin was stressed. For the first time in some months there was a trend in powder—a decided pinkish tone being asked for by the smart dressers. This was a tint requested in the style stores, in smart cosmetic houses and in the popular priced emporiums. Some buyers think that the term "Pink Lightning" has been responsible for this demand. Many of the powder mixers say that women had demanded more of the pink tone when they needed blue. Merely proving that a fashion tone, right or wrong for the complexion, is followed by a certain group.

CHOICE OF NAME A FACTOR

A definite trend, to make selling easy, is noted by buyers who say that a smart title for a perfume, a nail polish or a cream will move it ten times faster than any other form of advertising or promotion. Stores, that are leaders in the middle west, agree on this for they state that their argument today is impotent unless backed by a "name." Some idea of these are "Blue Sapphire"; "Shocking"; "Surrender" and many others that will come to mind. And this brings to mind a note which will interest those packaging cosmetics. Mr. Edward Southwell is engaged in the business of packaging cosmetics in Chicago and so the story in the Daily News of that city read: "Mr. Southwell ran across half a million attractive bottles at a price he could not resist—and the first thing he knew he had them on his hands, but without the least idea of how to pass them along at a profit . . . The problem was finally solved when Mr. Southwell obtained a quantity of what he describes as a moderately repulsive perfume—which he bottled and sold out completely under the appropriate name of 'Shameless'." So what's in a name and the bottle often form a legal union.

Dusting mitts are not new. The year just ending shows a trend that may indicate to makers of these that refillable mitts are the best sellers, for it was this type, plus the filler, which had the best sale. Talcums, especially those boxed with bath oils, or with soap are increasing in sale.

INCREASED SALES OF FANCY SOAPS

While Christmas giving does not often concern itself with sales of a dozen bars of soap the season just ended proved that there is a trend for this practical and needed essential and because it was FT free there were more sales made on fancy soaps in December, packed in smart boxes, than many retail buyers remember. This also extended to drug stores and chains. The middle west ought to be clean for the remainder of the winter.

Bubble bath, now a department staple, did not have the usual holiday splurge but its steady sales indicate it has made a place for itself in all department selling.

POPULARITY OF FLORAL ODORS

Perfumes have shown a trend that is increasing and the holidays tended to prove that predictions made by buyers in November were correct. There was more sale of floral odors, both in colognes and perfumes, than has been usual in some time. Chicago reports this as a growing demand. Minneapolis features florals as the only smart effect for the current time of year fitting into the spring season.

Kansas City stresses the florals in fancy bottles and colognes in matching fragrance. Yet this center also gives some attention to the sophisticated types which teenagers ask for, as they do in Omaha. On the other hand, the entire middle west seems to have decided that for the smart dresser florals are the only acceptable scent for the spring, as indicated by the sales in St. Louis, Milwaukee and Indianapolis. The latter city stresses the importance of bath sets—talcs, soaps and oils, and all of these are featured in the higher priced bracket for such merchandise. Being a critical war area the higher prices are not unusual, as this has been noted in all war plant areas.

Omaha is one city that gives unusual attention to cleansing and treatment creams, and St. Louis follows closely. But in Chicago there is a trend which indicates only two general types of creams are selling: Day and Night. Many buyers feel that much of the current skin roughness and blotching is due to the lack of a base on which to implant the rouge and powder. Chicago heads of stock, and buyers who wait on trade are frank to state that within the year there will be a tremendous swing to treatment creams, merely because of the blemishes of the skins, which have been subjected to pretty rough treatment.

Cake make-up is here to stay for some time according to the buyers in popular priced stores, drug chains, and in all style stores. The demand was as great for Christmas sale as ever. The one thing which most buyers feel must be a created trend is the sale of cleansing creams, of specific treatment creams to keep the skin soft, moist and fresh.

The ease of applying cake make-up has, in some instances, created neglect of these important skin factors. Virtually all buyers plan some way of displaying these and of advertising and placing stress on the smartness of fresh, clean skin. Especially in college centers will this route be used. Some buyers have expressed the hope that in featuring cake powders the theme of thorough cleansing may be used in national advertising, especially in ads read by young moderns.

NATIONAL ADVERTISED BRANDS

Many of the leading stores in the middle west have carried some fine cleansing and tissue creams under their own brands. Today all of these have been slowly discontinued. The reason is due to packaging—on the surface. Underneath is that old and ever new word *inventory* that makes the trend toward national advertised brands more important than ever. Women see the ads, and ask for the preparation. This has served to maintain a full stock assortment of quickly moving preparations. Under stock control every buyer recognizes the necessity for such buying and many brands have been given both display and advertising throughout this section, that in normal times would have been plugged by a demonstrator.

CUTICLE CREAM WITH APPLICATOR

Checks on retailers suggest that trends for the coming months this spring will center on such items as hand lotions and creams. Cuticle cream for the nails is reported very low in stock. Partly due to winter demand and small orders. Some buyers would like to see a cuticle cream with an applicator. One cuticle solution which is a top seller in popular priced stores does not combine a cream with it and this is a trend which buyers would like to see developed. The two could easily sell.

Manicure sets sold as fast as they were unpacked. Treatment kits had a like demand. Complaint of buyers is that if the makers of these kits hope to maintain their sales when current customers—many of them new to creams—purchase these after the war that better workmanship and packing is essential.

The one trend buyers want to see developed by the makers of cosmetics is more stress on treatment creams, how to use them and the importance of a powder base and the right powder for the complexion.

Taxability of Shaving Cream

The Treasury Department has given its opinion on the taxability of shaving creams through a letter from D. S. Bliss, deputy commissioner, to S. L. Mayham, executive vice-president of the Toilet Goods Assn. The letter follows:

"Reference is made to your letter dated Nov. 13, 1944, in which you inquire whether the taxability of shaving creams under section 2402 of the Internal Revenue Code depends on the claims made on the labels or in the labeling or whether collateral advertising for use of the product as a cleanser or for other cosmetic uses would affect the taxable status of the product.

"Shaving creams of either the lather or brushless type which are advertised and sold for use in shaving are not considered to be toilet preparations within the meaning of section 2402 (a) of the Code and the regulations promulgated thereunder.

"If, however, a shaving cream is advertised or held out for use for toilet purposes or for any purpose for which the articles enumerated in the law are customarily used, a sample of the product together with labels, packaging and advertising matter should be submitted to this office for consideration and a specific ruling."

Good Grooming Hint

GI Joe has turned research chemist, discovering a new and potentially valuable post-war use for dimethyl phthalate that had never occurred to long-haired scientists.

Millions of pounds of dimethyl phthalate are made yearly by Monsanto Chemical Company and sold for use by the armed forces as an insect-repellant. But in recent months, demand has far exceeded early army estimates on need.

Seeking an explanation, Monsanto was told: "It seems that some soldier, trying to ward off insects, plastered the stuff on his hair. The insects kept their distance, as planned, and thereupon GI Joe also learned that dimethyl phthalate would keep his hair in place, drying without residual traces common to many types of hair slickum.

"The result was that word of one soldier's findings went the rounds, that others tried it, and dimethyl phthalate has now gained acceptance as a hair goo—especially in war theaters where hair goo is hard to come by. That's the answer."

U. S. S. R. Essential Oils

It is reported that production of oils for perfumes, thymol, and a substitute for glycerine are being sucessfully produced in a plant in Kirghizia, in the Chu River Valley, Soviet Russia.

A Look at Civilian Goods Export

Export possibilities of the future discussed . . . Training of personnel for foreign markets . . . Keep your product in the public eye through advertising

by A. L. MOORE

THIS may seem a curious time to turn attention to export possibilities of the future. Production of civilian goods is ever more difficult. Many lines are scraping the bottom of the supply barrel. Distribution fights a losing battle with obsolescence.

Yet forward-thinking is imperative. When supply is once more plentiful, the men will have to be ready and trained to take advantage of their opportunities. Such training cannot be done overnight.

Let us see what this means for the toiletries industry. A receptive market is available in South America. China, the Near East, Russia—to name but a few. Other countries want those markets. Is there enough business for all competitors or will we have to force a monopoly?

Packaging first of all will have to be overhauled. Field men should report exactly how the market in question wants its goods delivered. Great Britain has made a solid reputation all over the world by scrupulously observing correct packaging for the country in question. Her breakage record is remarkably small. Good customer relations hinge on this vital point.

Labels are next in importance. What labels appeal most to the country in question? This is ascertained by sales, not in what we would like to sell. In some places a label is so packed with reading matter that it would provide a day's reading for the average person. If they want their labels like that, give it to them!

A thorough market study is indicated, by even the most superficial survey of needs. But how can you make a complete market study so far from the country in question? You can't. That's an on-the-spot job.

For the countries actively at war, the men will have to train in classrooms as best they can. Any spot you can get a passport to, start now. Remember, age is no barrier in learning a language. Older people frequently apply themselves better than younger ones. Two or three months of intensive work at Berlitz and they'll be ready to go. Arrange for schooling in whatever country they're going to, tutoring as well as class work. Send a small, carefully selected box of books on the country in question with each man who goes out. History, geography, economics, customs, trade, finance, religion. Each contributes its part to the whole picture.

A report from the field man should be required once a week. This should be as full as possible on what he sees. They can be trained for this by writing reports on what they observe here: how are the various classes of women dressed on Fifth Avenue at different times of day, for example; which counters are the most crowded in the stores; does this vary with the neighborhood? These reports can be studied by all the salesmen when they come in as the general life of the people furnishes the only background possible to understand why they like their merchandise as they like it.

The home sales force should be divided into study groups of those countries you wish to do business with after the war. If you want them to take college courses, you should pay the tuition. Or you can have lecturers but this will prove even more expensive.

The manners and customs of a country call for careful study. It's very easy to offend without meaning to. Your local representative must be of good standing in his community. Your field men takes orders from him. And the State Department and the Department of Commerce will see to it that your representative is a good one for the sake of future trade relations.

There are few books on manners unfortunately. Dozens of books have to be read in order to pick up a little here and a little there, often in novels. Then an observing eye is needed. Who goes through a doorway first? Contracts have hinged on less.

The Army has a series of booklets which soldiers are given before being quartered in a country. I wish these books with their down-to-earth commonsense were available. Perhaps the Department of Commerce can arrange for all future passports to be dished out with books on the country. It might save many a future headache both for the Commerce and the State department. The G. I. is particularly cautioned not to let his eye stray to the females in some countries where that invites a shotgun wedding or a shotgun, period.

Weights should not be printed in ounces. Boxes must be redesigned in colors the country favors. Advertising must start now to build a future market. But be sure your advertising is of the sort the country is used to. Don't use just a translation of your usual ad.

STUDY COLOR TASTES

Some countries love nail-polish in deep bright colors. Others only want a cake and buffer. Where deep bright lacquers are wanted, don't try and cram the new pink shades down their throats or the blue purple.

Where they consider lacquer in bad taste, don't force the issue. There's a big market in the old types of hand-buffed polishes.

Hand lotions are universally popular. But not one formula will

satisfy world tastes. Some countries use oils for the hands. Give them a lotion with an oil base.

Chemistry is a universal language.

Others have used honey for years. Some like an herbal odor in their hand preparations; some want a heady fragrance; some want no odor at all but prefer to use a perfume with no competition from bath powders or lotions.

Most other countries don't want fashion changes in their cosmetics. Work out a line carefully and then stick to it, seeing the supply is maintained and backed by advertising.

An all-purpose face cream, a rich cream, a hand lotion, two pure red lipsticks fairly dark with no yellow or blue overtones, two pure red rouges, an astringent oil, a body oil, soap, cologne, sachet, concentrate, bath powder, perfume, toilet water, two face powders generally on the rose beige, or rose rachel tone. This is your basic list. Don't offer too wide a range of powders or rouge. Your field man is going to have a hard enough job checking odor preferences on these items for you, checking and re-checking color selections.

In the items which have been off the market for most of the war years, are you going to have too hard a job rebuilding customer demand? Not if you keep advertising going so they never forget they want those items.

A grocer told me bitterly last week that one of his customers used to buy a can of a certain corn every day. She was crazy about it. When rationing came the points went up and up. First, she could buy a can a week, then only a can a month. Presently, she stopped buying corn. Finally, a lot of corn was released to the grocers. It stayed on the shelves. Nobody bought. When this customer came in, the grocer pointed the cans out to her. She nodded but didn't buy. Her tastes had been forced into another channel. The grocer insisted that had the company maintained its magazine, newspaper and radio advertising, the public desire would still have been there for that brand and they would have bought eagerly whenever a can showed up on the shelves. Now the advertiser will have to sell his brand to the public as though marketing a new and untried item.

ADVERTISING ESSENTIAL

The toiletries industry has thoughtlessly let a lot of its goodwill slip away in the same fashion. How many of you are advertising your hair products as you did before the war? Don't forget most other countries depend desperately on advertising lineage from us in order to keep their papers going at all.

Speaking of the hair tonics and pomades, here's a line which needs a good going over, too. Are you giving your customers what they want or just selling what you happen to make? Does the country in question use a cream dressing or want a liquid tonic? What difference is there in what the women want for

Lecturing on good business practice.

their hair and what the men use? Do women buy your product just because they can't get what they want and will you lose that market if someone supplies that want before you do?

In supplying compacts a careful study of habits is again necessary. Do they prefer leather or metal? How elaborately should the case be worked? Is loose powder most used or a cake? In any event the compact should not be sold without powder.

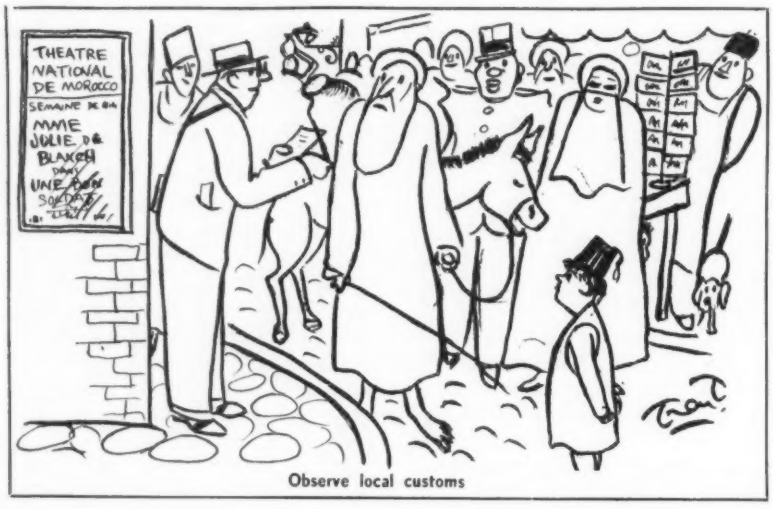
Lastly, you must choose between a quality and a mass market in each country. If you expect to supply both, use two different brand names and two different methods of approach. For, just as here, you can't ride two horses going at two different gaits without losing your footing.

Include a description of your complete line in each package. See that the booklet is printed in all the necessary languages (several countries require six)!

Some sections dote on neon signs, as Shanghai used to. Others want no garish display. Where signs are needed, give them signs, profusions of signs. After blackouts have been in effect in so many countries for so long, it will be only natural if electric signs will rival Broadway for years after the war.

To see export possibilities come to reality, the various bureaus will have to let up on forms and the current attempt at price-fixing being conducted by the O. P. A. which would automatically stop export at the source. The Department of Commerce, the State Department and the Treasury Department are all on record, however, as favoring tremendous export increases. Since red-tape and production increases are not synonymous, the three big departments will eventually get their way.

An interesting point has been raised a number of times recently.



Observe local customs

Don't give all foreign rights of distribution to a factor not of the country in which you plan to distribute. It only causes friction. This lends emphasis to the use of your own sales representatives who sell nothing but your goods and are interested in building your products and not those of your foreign competitors as well. It also shows the folly of trying to sell a country with the sole use of American salesmen.

For future goodwill and sound trade relations, have several promising students from each country in question brought up and given jobs with your firm. Your local man can select them with the assistance of the sales representative you send down. These boys should be given practical work during half a day so they see how to run each phase of the business and why it is conducted in that fashion. The other half day should be spent in college at your expense to learn American history, chemistry, geography, mathematics. Leave out the courses which would confuse them, like Political Economy. Have them tutored in English so they won't be embarrassed. Several evening hours a week, they can lecture to your sales classes on customs, history, etc., of their country. The more students we bring in during the next couple of years, the better. People always like each other when they know each other as workers. Squabbling about ideas produces quarrels but solid work never does. You can't quarrel with a fact. You may not like it. But it's a fact nonetheless. Students of mathematics, engineering and chemistry meet on common ground in every country. It's up to us to build our future world and trade relations, on mathematics, engineering and chemistry.

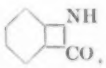
Meanwhile, let's not overlook the home market spreading before us. The same careful study devoted to it, during this time of wartime restrictions on trade, will repay us later by better customer relations.

Nitrogen Compounds in Perfume Chemistry

by DR. ARNOLD BELLER
Centflor Manufacturing Company

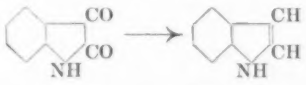
WE know of two different types of aromatics in which the nitrogen atom is the determining factor to odor. The amines and nitrocompounds where the nitrogen is placed in the side chain of a benzol ring are relatively simple. Chemicals belonging to this group, such as nitro benzol, methyl anthranilate, musk xylol, musk ketone and musk ambrette enjoy a large use and are manufactured on a large scale.

In the middle between this group and the heterocyclics lies a product often described in literature, "anthranil."



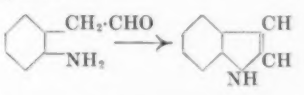
obtained by intramolecular dehydration of anthranilic acid.

Less developed and used in perfumery than the amines and the poly-nitro compounds are the heterocyclic chemicals possessing the pyrrol, the pyridine and the quinolene ring, wherein the nitrogen is a part of the nucleus. The best known representative of this group is indole, and its beta-homologue skatol, which occur in nature both in plants as well as in animal glands. They are indispensable in jasmine compounds, and in imitations of animalic character (castoreum). They were first synthesized by E. V. Bayer from isatin, an oxidation product of indigo.



Jasmine and orange flower oil contain a considerable amount of indole whereas scatole, the beta methyl derivative of indole, has been found to be an odoriferous constituent of human feces.

There are many good methods for the technical production of indole and scatole. They all start from aromatic compounds and obtain the five membered, nitrogen containing nucleus, ring closures. Their general high price is by no means justified. The most promising synthesis starts from o-amino phenol acetaldehyde, which gives indole by intramolecular dehydration.



Pyridine and quinolene derivatives are described in perfume literature but only very few firms have ever gone into the production of these interesting chemicals. Isobutylquinolene is the only product relatively known and used as a substitute for oak moss. Pyridine derivatives of excellent odor value, and well described by the Russian chemist Tchitschibabine as having a distinct flowery odor reminding one of rose and other floral notes have hardly ever been produced. This field is an excellent one to investigate. By varying the different side groups many valuable compounds could be developed.

ISOBUTYL GROUP

Among all these derivatives of the heterocyclic ring systems containing nitrogen in the nucleus we find the great influence of the isobutyl group upon the odor, which is similar to the isopropyl group in the terpene and camphor family.

There is no doubt that some of the homologues of pyridine and quinolene, like picoline and quinaldine, will some day find an important use in perfume compounds; as soon as perfumers find it worth while and profitable to leave the conservative path they usually follow, and thereby encourage the organic chemist to direct his attention to developing chemicals which, when looked upon superficially, are not now considered as belonging to perfume chemistry.

Short Adages

by R. O'MATTICK

DR. ROWMATERAL took his young grandson to the Planetarium the other day. While the famous perfumer was refreshing his knowledge of things astronomical in order to explain the big Universe to little Junior, he was impressed, not for the first time, with how much scientists really know about the planets, their motions, their respective and relative densities, and the elements these far-off spheres contain. While Junior plied the good Doctor with question after question about shooting stars and comets (for Junior is a very dynamic youngster and has a keen interest in only those things which move fast) Dr. Rowmateral thought of the static nature of the planets, their surfaces and atmospheres and of the elements found on them.

He hardly paid attention to the thousand-and-one Riddles of the Universe his grandson was formulating as his thought drifted to the question uppermost in his mind—do planets have odors—and if so—what are the characteristics of these cosmic compounds. Just as astronomers have found certain elements in the heavenly bodies by the use of spectroscope and telescope, Dr. Rowmateral would wish for nothing better than some sort of telescopic osmograph to investigate the nature of planetary perfumes. Most explorers, were they able to reach Mars or the Moon, would first of all try to establish whether these neighbors of ours were inhabited but not so with Dr. Rowmateral. Not that he is unsocial. Anyone who has seen him at Conventions knows better than that of him.

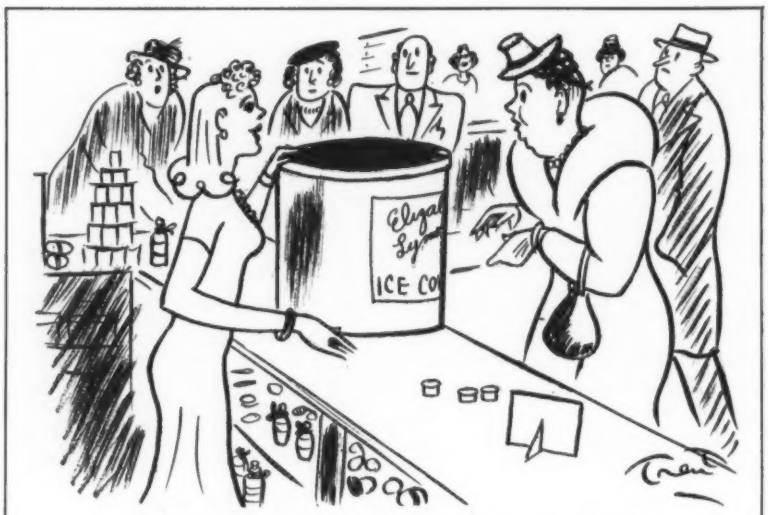
But his interest in perfumery is so far-reaching that his main concern would be to find out what types of unearthly odors exist there, if any. And were he to discover that Mars were odorless he would not care to remain there very long, no matter how pleasant the place, unless he could return to it with his bottles of samples, his solutions, smelling blotters and the current issue of THE AMERICAN PERFUMER to peruse.

Yes, he thought, day-dreaming in spite of Junior's continuous chatter, in either case these planets would be worth visiting, for if they have fragrances on them these odors would be worth smelling to compare them with what our own essential oil houses have to offer. And if their atmospheres are odor-free, what ideal places to work in. It would be a long-wished for experience to create new perfume compositions in an odorless environment instead of in a place surrounded with gasoline, coal gas, cigar fumes, etc.

* * * *

THE BUYERS' BLUES

From morning to dusk
We are hunting for musk—
Musk ketone or ambrette
We would like to forget.
The market's very dynamic
On aldehyde cinnamic
And there is plenty of call
For real good Rhodinol
'Tis too good to be true—
I found some rue!
What was called a drop
Is now known as a crop.
There was a time the Buyers' Guides
Were books I kept on all my sides!
But now, I have a keen desire
To throw them all into the fire.
The reason I resist this caper
Is merely to conserve some paper
Some day I shall at one gulp
Reduce the whole lot into pulp
For when I look for Where to Buy
The Buyers' Guides attract my eye
And always drive me nearly zany
By listing firms that haven't any.



"This is the largest jar we have in stock at present, Madam!"

Heard in Washington

If WMC limits the number of persons you may employ, and you try to avoid compliance, Justice Byrnes, of WMRO, has directed that WPB may either withdraw or modify the allocations and priorities that may have been made to you. This covers materials, equipment, fuel, gasoline—anything you obtain under regulations issued by WPB. If WMC certifies you have refused to comply with its regulations, WPB will institute proceedings before its Compliance Commission. You are given a hearing, and if you cannot justify your recalcitrance, the WPB metes out the punishment. This indicates, obviously, that the manpower situation is rapidly becoming more acute. . . .

The annual Western Gift and Art Market in San Francisco, part of the Spring Market Week, February 5 to 10, is expected to feature a number of perfume and cosmetic products. The Market is held under the joint sponsorship of the San Francisco Chamber of Commerce and the Western Merchandise Mart, and is one of the most interesting commercial events of the year. It attracts thousands of buyers from all States West of the Mississippi River. It is watched with interest by various Federal Government agencies. . . . It is reported California has just marketed one of the largest almond crops in history. . . . Army reports during the past three months it purchased over 4,000,000 containers filled with face paint for soldiers.

United Kingdom Perfumery Export Handicaps

Key men of the United Kingdom perfumery trade discuss the reestablishment and development of its export trade . . . Post-war Committee submits annual report

by OUR BRITISH CORRESPONDENT

ONE of the largest if not the largest assemblies of the United Kingdom perfumery trade sat at a luncheon preceding the annual meeting of the Perfumery and Toilet Preparations Manufacturers' Section of the London Chamber of Commerce, held on November 23, at the Connaught Rooms, London. The Section is the body to which the trade has looked for, and successfully relied on, for guidance in these difficult war years and the prevailing sentiment of the gathering exemplified the gratification at what had been accomplished, and hopeful reliance on future effort.

Mr. L. J. Matchan (Max Factor), the chairman of the Section, presided, and the function was graced by the presence of a member of the Government, Captain Charles Waterhouse (Parliamentary Secretary to the Board of Trade), who in a speech, showed marked friendliness to the industry and promised, within the possibilities, all assistance.

Later in this account, the salient points of the business meeting are summarized, but here it may be said that in the after-dinner oratory Mr. Matchan proposing the health of "the visitors," wrapped up serious considerations happily, indeed, almost gaily. "We all of us dislike control," he said, "but we must agree that the form of control under which we are now working has proved to be fair and reasonable. It is probably as water-tight as it can be made and, although it would be futile to say that it is not causing injury it is at least not causing us now any serious irreparable or avoidable injury."

After referring to the realization by the Board of Trade that the industry was not the unnecessary industry that they had believed, Mr. Matchan said that in the last few weeks they had been able, with the cooperation of the Board, to make a start in the rehabilitation of the industry and the reestablishment and development of its export trade. They could not, however, secure that full export trade which the industry and the Government both so earnestly desired without alcohol, and many other materials. The industry cannot be content to wait until the years after the war. It was going to come up against severe competition from many other countries, and from local manufacturers in countries which, before the war, were content, and indeed anxious, to purchase from this country. "We are confident that our potentialities, especially in the export field, are great and, if we may not be among the major export trades, we do bring in a return in relation to materials and labor expended as high as, if not higher than that of any other export trade. But to accomplish this we must be able to produce goods of a high standard, and to produce a full range of products, we need to put perfumes back into the important place they occupy in that range. Alcohol is only an example, there are other materials that we need, and especially packing materials."

PACKAGING MATERIALS

Captain Waterhouse, in reply, spoke of the sacrifices of the industry and other industries in helping to pull the country through. They had had "concentration" but the industry had kept the structure of its trade complete for its post-war deconcentration. They had kept together to a degree never before, and by cooperation, they would outbeat competition. He believed they should have one large organization through which they could meet the Government. Lack of labor at the moment was an extreme difficulty, but he could assure them there was no large camouflaged body of unemployed. The black market was not now so large a difficulty as in the past. The Board of Trade knew of the difficulties of the industry, and was not withholding anything that they could concede. As to packaging, whilst he could make no promises, the Board would look into it, and consult other departments with a view to granting better packing materials to secure more exports.

Mr. T. Lyddon Gardner (Yardley), proposing "the chairman" referred to his energy and facility in comprehending complexly-worded Government Orders. Mr. Gardner added that he shared with Captain Waterhouse the desirability of having one united industry and hoped they would bring about that unity. Mr. Matchan briefly replied.

THE ANNUAL REPORT

At the annual general meeting which immediately followed, Mr. Matchan reported on the work of the Section during the year, given here in abstract: Having largely settled the problem of war-time control, the Post-War Committee, after much deliberation, had submitted its report to the general meeting of the trade in April, and it met with a very cordial response. So they had made a start to increase the industry's capacity for export within the rather necessary limitations as to additional labor, which the Government has had to impose. The trade had also received, that week, notice of withdrawal, in the main, of export licensing and export quota control. The Board of Trade had made them no promise or guarantee, nor on the export side, can they promise more shipping space, or any general easement of overseas import restrictions, but the Board will not place unnecessary obstacles in their way.

The trade must exert every effort to make the other Ministries concerned realize the urgency of the

claim of the industry for essential raw materials and labor if export is to be restarted and increased. Without better supplies of paper and board few of them could increase their export trade to any real degree. Plastic, glass and metal containers are still difficult, but the outlook does not look quite so despondent as the paper outlook. In regard to manufacturing, the raw material position is easing slightly. This year the industry had seen its first supplies of newly imported essential oils, admittedly not all that we want, but anyway a start, and they hoped it would not be long before they got from France, and perhaps also from Switzerland, some of those fine aromatics which are so vital. Two major articles which fall under the obligations of lend-lease are alcohol and now, thankfully, to a lesser extent, petroleum products. He hoped that the discussions going on with the object of easing this stranglehold of our export will be brought to an early and successful conclusion. Mr. Ben Smith's maiden speech at Washington gave them reason to hope; he at least placed before the American people the British export situation, in its true perspective. Two other raw materials which have become very difficult are talc and lanolin, but he could not report much progress.

Turning to the domestic and detailed side, Mr. Matchan spoke of the continued increase in strength, vitality and work of the Section, and of its high prestige with the Government. He deplored the existence of another organization. They had found almost complete agreement with that organization on the various trade matters concerned, and if that agreements exists, surely there could be made no need for two bodies, a position potentially dangerous, for the industry. During the year informal discussions have taken place with view to examining the possibilities of one organization.

During the year, though good work was accomplished by the Hair Preparations Committee under Mr. Fabricius which resulted in the withdrawal of the ban on the use of petroleum products in hair preparations, and the introduction of an equitable scheme of distribution of supplies for that purpose.

In regard to home quota control, they were able to persuade the Board of Trade to abandon the limitation that not more than half of quota supplies could be put out in the first three months of the quota period.

RAW MATERIALS AND LABOR

The question of supplies for troopships was also satisfactorily cleared up, and an arrangement has now been made under which manufacturers are especially licensed to supply the Merchant-Navy Supply Association to their ordinary quota.

Procedure was also devised in conjunction with the Board of Trade to enable those firms who conduct all their distribution through an Associated Distributing company to supply N.A.A.F.I. without having to count it against their quota.

Another minor change agreed upon by the Board of Trade, at the request of the Section, was the special licensing system under which firms who act as distributors for both home and export trade are enabled to obtain, quota free, supplies for export, although they are not registered under Part II of the Toilet Preparations Order.

Mr. Matchan expressed thanks to the deputy chairman, Mr. Cowlishaw, who had given the greatest possible assistance, and who had now taken on the work of guiding the new subcommittee on price maintenance. He also very properly, and most deservedly, thanked the secretary of the Section, Mr. J. W. Middlemiss, M. B. E., who had been a tower of strength not only to the Section and to him, but to the whole industry.

Concluding, Mr. Matchan said. "I was reading the other day of the Toilet Goods Association of America wherein it was stated, and I quote: 'There is no reason why American toilet goods should not be considered the standard of the world, and there is no good reason why your industry should permit production in other countries to assume such leadership by default.' We know that competition from the other big producing countries will be great in the export field, but there is no reason, either, why British toilet goods should not be considered the standard of the world, and we must make sure that lack of effort on the part of the industry, or lack of help on the part of the Authorities, does not let any other country assume leadership by our default."

Laundry-Bath Service

Quartermaster laundry and bath companies, set up as near the front as possible, often close to the actual fighting, are important factors in maintaining health and morale of the fighting men.

Typical of these operations is the record of a QM Fumigation and Bath Company which moved in to join forces fighting in and around Aachen, Germany, setting up its camouflaged equipment in a grove where the trees helped conceal operations. Its proximity to the fighting made it possible for small units to be withdrawn from the line successively and sent back for a shower or bath and changes of clothing without hampering front-line operations.

Like most of these mobile bath units, the company was accompanied by a section of a laundry unit. The men turned in their soiled clothing and on emerging from the showers received fresh garments in exchange; the clothing turned in was laundered and re-issued to other groups coming in later.

This exchange procedure, common to most combat areas, serves the double purpose of assuring fresh, clean clothing as well as reducing the volume of extra garments that must be sent to the front, thus releasing space for other supplies.

Rosin Consumption

Rosin consumption in the São Paulo, area, Brazil's principal rosin-using center, amounts to between six and seven thousand metric tons per year. Imports from 1938 to 1943 amounted to an average of 6400 tons, with the United States supplying the majority of the material. Small quantities were imported from Germany, Norway and Portugal in 1938, 1939 and 1940, but since that time the United States has been sole supplier.

Rosin, in Brazil, is used chiefly in the manufacture of soap, with 45 per cent going to that industry. Grade K wood rosin is the principal type used, with grade K gum rosin second in importance.

Stocks of rosin on hand have been normal, or above normal, since the first half of 1943. Consumption has trended upward and it is expected that this condition will continue.

Attempts to produce rosin locally have not met with much success.

Technical Abstracts from Scientific Literature

These brief abstracts listed provide a convenient key to current scientific literature of the world on perfumes, cosmetics, soaps, dentifrices and other preparations

Coconut Oil Replacement. Coconut oil and palm-kernel oil are being replaced to some extent by sulfonated oils. The soaps of sulfonated oils serve as extenders for soap. F. Wittka. *Fette und Seifen* **49**, *115-17.* (Through *Soap & Sanitary Chemicals* **20**, *65, 1944.*)

Preparation of a Cetyl Pomade Containing Cholesterol. F. A. J. Thiele. *Pharm. Weekblad.* **79**, *777-9, 1942; Chem. Zentr. 1942, II, 2542.* The following formulas are proposed for a pomade: cholesterol 1, 1; cetyl alcohol 3,3; anhydrous lanolin 5,5; paraffin 20, 20; liquid petroleum 30,27; white petrolatum 50,50; water 70, 106 parts. It is perfumed by a mixture of lavender oil 2.2 cc artificial oil of neroli 2, bergamot oil 10, rose oil 4, jasmine oil 5, rosemary oil 10, essence of ylang-ylang 15 drops, coumarin 0.4 g with 2.5 g for each 1000 g of pomade. (Through *C. A.* **38**, *3086, 1944.*)

Barrier Creams. Louis Schwartz. *Soap, Perfumery & Cosmetics* **16**, *709-11 (1943).* The keynote of the prevention of occupational dermatitis is to keep contact of irritants with the skin at a min. Protective ointments are placed in six groups depending on their action and type formulas are given. Two types of formula for industrial skin cleansers are detailed and discussed. (Through *C. A.* **38**, *833, 1944.*)

A Graphic Method for the Control of the Manufacture of Sulforicinoleates. F. Lachampt. *Chimie & industrie*, **47**, *606-8, 1942; Chem. Zentr. 1943, I, 691-2.* For the determination of a sulforicinoleate (I) methods are suitable that measure the water and fat contents, the degree of sulfonation, acid and lime resistance, and wetting and emulsifying powers. Sulforicinoleates can show the same degree of sulfonation but differ in properties. L. suggests a new method of analysis which depends on the fact that a sulforicinolic acid becomes turbid on treatment with Sodium Hydroxide or water. Qualitative and quantitative methods of determining I by this procedure are suggested. (Through *C. A.* **38**, *3386, 1944.*)

Ointments and Salves. U. S. pat. 2,300,780. Sulfated oil compositions suitable for use in sulfated hydrogenated castor oil or phosphated hydrogenated castor oil having an iodine value less than 11 are used to form water dispersible preparations. (Through *J. A. Ph. A.* **33**, *38, 1944.*)

Vitamin A — Absorption of, Through Human Skin. J. Mandelbaum and L. Schlessinger. *Arch. Dermatol, Syphilo*, **46**, *1942, 431;* through *Abbott Abstract Service No. 1266.*—Experiments were made on 17 young men to test whether physiologically significant absorption of vitamin A can take place through the human skin. During the course of dietary vitamin A depletion ointments containing vitamin A were applied to the skin of the subjects; the status of vitamin A nutrition was studied by means of dark adaptation measurements. The results of the experiments indicated that vitamin A can be absorbed when it is applied to the intact human skin. The vitamin was active in a preventive capacity when it significantly diminished the rate of rise of threshold. It was also active in a therapeutic capacity, improving the dark adaptation in subjects previously depleted of vitamin A. In cases in which intestinal absorption is impaired, an alternative route to parenteral injection is suggested by this method. It is possible also that specific cutaneous lesions of vitamin A deficiency will respond to this form of therapy. (Through *J. A. Ph. A.* **33**, *81, 1944.*)

Powders-Mixing of, in a Shaking Box. L. Rosenthaler and Orhan N. Yalcindag. *Pharm. Acta Helv.*, **17** *(1942), 189.* The uniformity of composition obtained by shaking powders in a wooden oval-shaped box was studied on three mixtures: I, sodium chloride and anhydrous sodium sulfate; II, anhydrous sodium sulfate and sodium bicarbonate; III, sodium chloride and mercuric chloride. After varying periods of shaking, samples were withdrawn and analyzed for one of the components. The results are compiled in 13 tablets. Five minutes of vigorous shaking was found sufficient to produce uniform mixtures with samples of I and II of varying composition. Ten minutes of shaking was required to obtain a homogeneous mixture for III. The powders should be of approximately the same fineness for satisfactory results. (Through *J. A. Ph. A.* **33**, *39, 1944.*)

Abrasion and Solution of Teeth. Wilmer Souder and Irl C. Shoonover. *J. Research Natl. Bur. Standards* **31**, *247-253 (1943).* Minute changes in calibrated indentation marks made by a diamond hardness indenter upon enamel and dentine of teeth can be produced and measured microscopically in a short time. Sample data for changes caused by abrasives, chemicals and bacteria are presented. (Through *C. A.* **38**, *783, 1944.*)

"Green" and Leaf Odors. Arno Muller. *Deut. Parfum-Ztg.* **27**, *240-1 (1941); Chem. Zentr. 1942, I. 1315.* A discussion of natural and synthetic perfumes having "green" and leaf odors, e.g., Me heptynecarboxylate; 2, 6-nonadien-l-al; a, B-hexylenealdehyde; 3-hexen-l-ol, p-methylphenylacetaldehyde; Me acetal of phenylacetaldehyde and others and of their significance in the composition of odors. (Through *C. A.* **37**, *6409, 1943.*)

(*Continued on Page* 54)

Packaging Portfolio

HOUSE OF WESTMORE: A new and totally different face powder, for use with tinted foundations, is now available. Overglo face powder is non-coloring and therefore generously applied over the foundation-tinted skin. The foundation absorbs just enough for that natural satin-smooth unpowdered look.

LENTHÉRIC: Soft-focus night cream is captured in a white glossy jar with a turquoise toned label and topped with a turquoise toned cap inscribed with gold lettering. A liberal amount of lanolin goes into its preparation, making it a boon in winter weather.

LA CROSS: A new shade in nail enamel "Pink Magic" is now introduced on the market. The easy-to-handle bevelled bottle has a pale grey band. The grey box is decorated with the La Cross "hand" design.

HOUSE OF WESTMORE

LENTHÉRIC

POND'S

OGILVIE SISTERS

LA CROSS

JONTHAY

ALEXANDRA de MARKOFF

OGILVIE SISTERS: First-aid for last-minute grooming, this new Dry Shampoo Powder leaves the hair clean-polished and fragrant as well. No mitt is needed as it comes packaged in a colorful, shaker-top box.

POND'S: "Beau Bait," a lush crimson, is the newest in lipstick color. It appears in a slim flowered case made of paper board. Head and heel of the case are of plastic. "Beau Bait" comes in a dry rouge as well as lipstick.

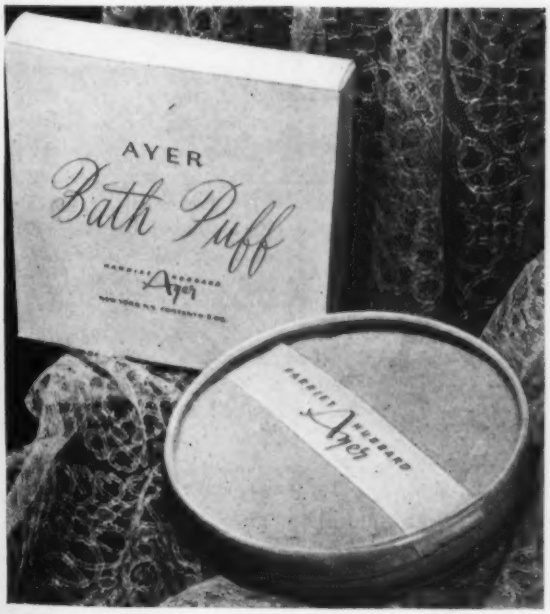
JONTHAY: Room perfumes for children and grown-ups in packages designed by Alan Berni serve a double purpose. The wooden cut-outs make attractive toys while the molded hand may be used as a table decoration, or cigarette holder.

HARRIET HUBBARD AYER: A new accessory to the bath is the Ayer bath puff. It is of pure silk woven with a special mesh which insures softness. It is packaged in a decorative transparent box where it can be retained after use.

ALEXANDRA de MARKOFF: Presented in a startling black and white bottle and packaged in a satin-smooth white box, "Enigma" is offered in two strengths. The fragrance is compounded of an extraordinarily high concentration of perfume oils.

PARFUMS SCHIAPARELLI: For the fellow who is meticulous about his personal grooming, Snuff Eau de Cologne is the fine, fresh, fragrance to follow the daily shower and shave. It comes in a pipe-shaped bottle.

HARRIET HUBBARD AYER



PARFUMS SCHIAPARELLI

New Emulsifiers. T. D. Whittet *Chem. Products* **6**, *67-8 (1943); cf. C. A.* **37**, *3879.*—Promulsin wax, a cream-colored waxy solid, is a mixture of higher fatty alcohols combined with emulsifying compounds. It emulsifies high proportions of oils and fats and, being stable and neutral it can be mixed with many ingredients used in pharmaceutical and cosmetic preparations; certain compounds, as zinc oxide and zinc carborate, tend to upset the emulsions. Water-in-oil and oil-in-water emulsions can be produced. Promulsin TS, a fine, white powder, with odor of ammonia, is a substitute for triethanolamine. Oil-in-water emulsions made with this product. Various applications are discussed. (*Thru C. A.* **37**, *6763, 1943.*)

Effect of inositol on rat alopecia. Tony J. Cunha, Samuel Kirkwood, Paul H. Phillips and G. Bohstedt. *Proc. Soc. Exptl. Biol. Med.* **54**, *236-8 (1943.)*—A form of rat alopecia due to lack of inositol is described. (Through *C.A.* **38**, *1029, 1944.*)

Oil-in-water Emulsion Compositions Suitable for Polishing Various Surfaces. U. S. pat. 2,320,236. A disperse phase comprising water and an emulsifying agent such as triethanolamine soap of polymerized rosin and an ammonium soap of shellac is used with a dispersed phase consisting essentially of a polymerized rosin and waxes, such as carnauba wax, montan wax and beeswax, which may be used in an amount of about 1-100 times the amount of the polymerized rosin. With such an emulsion, there may also be used various auxiliary ingredients. (Through *C. A.* **37**, *6377, 1943.*)

Arsenic in the Hair and Some Other Conditions of Workers With Arsenic Poisoning. L. Schwarz and W. Deckert. *Arch. Hyg. Bakt.* **129**, *276-85, 1943.* The cases of 25 workers who have had contact with arsenic are reported. Analyses for arsenic are made on the long hairs on the head, the short neck hairs and the pubic hair. From the differing arsenic contents of the long head hairs and the short, newly grown young neck hairs certain conclusions on the time of arsenic absorption can be drawn. Arsenic analysis of the blood of the workers shows wide variations, as is also the case in medication using arsenicals. Deviation from the broad limits established indicates arsenic poisoning. (Through *C. A.* **38**, *3365-6, 1944.*)

Mercury Fulminate Dermatitis. To reduce the incidence of mercury fulminate dermatitis in the explosives industry two workers in the U. S. Public Health Service have produced a liquid soap which, by a change in color, shows the presence of traces of the mercury compound upon the skin. Details of the composition of the soap are given in "Public Health Reports," 1943, 58, 1183 (through the "Pharmaceutical Journal").

The soap contains: diphenylthiocarbazone 0.18 gram, triethanolamine 250 cc., liquid soap 750 cc., hydroquinone 0.015 gram. The soap is orange in color and in the presence of traces of mercury salts it changes rapidly to a deep, easily recognizable purple. The triethanolamine brings the mercury fulminate into solution and the change of color is produced by reaction with the diphenylthiocarbazone. One drop (about 0.05 cc.) of the reagent soap solution will indicate the presence of 2-10 (0.000002 to 0.00001 gram) of mercury ion sq. cm. (Through *Chem. Ind.* **54**, *122, 1944.*)

Non-foaming Shampoo. U. S. 2,336,166. Use is made of a sulfated mixture of a paraffin oil and rice-bran oil.

The Viscosity of Suspensions. The Effect of Strong Electrolytes on the Viscosity of Suspensions of Starch and Bentonite. A. V. Buzagh. *Kolloid-Z.* **103**, *119-26 (1943).* The viscosities were measured at different concentrations and in the presence of various sodium and potassium chlorides; potassium sulfate, phosphate, ferricyanide and ferrocyanide; amounts of electrolytes such as barium chloride; copper chloride; magnesium sulfate, aluminum and thorium chlorides. The results were compared with those obtained on quartz suspensions. In general starch and quartz suspensions have similar properties, except that in starch both ions affect the viscosity, whereas in quartz only the cations have a pronounced effect. Bentonite suspensions, being hydrophilic, behave differently. (Through *C. A.* **38**, *289-90, 1944.*)

Skin and Cleaning Compounds. The protection of the skin from the action of cleaning compounds used in industry, and particularly in aeroplane works, is of considerable importance, since the skin hazards are many, but preventive measures can in every case be adopted. The *Bulletin of Hygiene, Jan. 1942,* gives the following details taken from J.A.M.A. For cleaning of planes and engines a compound of the following approximate percentage composition is used:

Creosote oil, containing about 5% of phenols, 50, orthotoluidine 20, diethanolamine, oleic acid, and ethylene glycol each 10%. This is commonly diluted 1 in 5 with water or paraffin, and contains up to 50% of commercial cresylic acid.

All these are skin irritants or sensitizers. Nearly one-third of those working with paraffin develop in time a dermatitis whereas if water is used as a diluent, evaporation will result in a greater concentration of the constituents. For cleansing of metal the preparation would be ineffectual if diluted to a concentration below that sufficient to cause dermatitis. (Through *Chemical Products* **5**, *32, 1942.*)

Product From Sea Moss Suitable for Use in Stabilizing and Jellying Foods. U. S. 2,337,562. A process is employed in preparing a concentrate of the active gelatinizing principle of sea moss which involves forming a lixiviation mixture of chopped sea moss and a cold 15-40% aqueous solution of a lower aliphatic alcohol such as isopropyl-alcohol (the sea moss not exceeding about 20% of the mixture), maintaining the mixture for a sufficient time to permit substantially complete hydration of the sea moss and dialyzed separation of at least a substantial proportion of free salts and other soluble impurities, separating the treated sea moss material from the lixiviated liquid and contained solubles from the sea moss, dissolving the treated material in water to form a solution, separating insoluble matters and any residual flavor, odor and color from the solution, as by dissolving in hot distilled water and filtering, and recovering the concentrate from the resulting solution as by drying. Sugars may be added, and hydrogen peroxide may be used for bleaching.

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FLAVORS

Definitions and Standards of Cacao Products

THE Acting Administrator of the Food and Drug Administration, Watson B. Miller, released standards for cacao products on December 4. Excerpts from these standards follow:

SECTION 24

Label statements of the presence of optional seasoning in chocolate liquor to be accurate are listed by groups.

Group I. "Spiced," "Spice Added," "With Added Spice," "Spiced With —," "—Added," or "With Added —," the blank being filled with the spice used.

Group II. "Flavored," Flavoring Added," "With Added Flavoring," "Flavored With—," "—Added," or "With Added—," the blank being filled with the flavoring used.

Group III. "Artificial Flavoring," "Artificial Flavoring Added," "With Artificial Flavoring," "Artificially Flavored With—," or "With—An Artificial Flavoring," the blank to be filled with the name of the artificial flavoring used.

Group IV. "Seasoned With—," the blank being filled in with the name of the seasoning used.

SECTION 65

In cases where cacao products contain mixed dairy ingredients and have not acquired common names, the foods will be considered to have accurate names when called "chocolate" or "chocolate coating" preceded by any two or more of the designations "milk," "skim milk," "buttermilk," "malted milk," as the ingredients of the product warrant. The wording should be in order of predominance, if any, of the weight of the milk constituent solids.

Two kinds of chocolate flavored coatings are manufactured with fats other than cacao fats for special uses. They are used in coatings which are subjected to unusually high or low temperatures, such as with ice cream or in bakeries.

Low-melting-point coatings are generally not known by any particular name, but are sold under such terms as "Ice Cream Coating," "Paddle Pop Paste," "Northern Lite Ice Cream Coating," etc. None of these names identify the product, or show that it does not contain cacao fats, as, "Sweet Chocolate and Vegetable Fat Coating."

High-melting-point coatings are used in bakeries, and where circumstances require retail storage in the summertime, particularly in the south. As is true in the case of low-melting-point coatings, these products are not known by any general name, and are identified by such trade names as "Cocoa Coating," "Summer Coating," "Sudan Summer Coating," "Supreme Coating." The products are not identified by these names, nor do they show that cacao fats are not contained. Proper labeling calls for "Sweet Chocolate and Vegetable Fat (other than cacao fat) Coating."

The definitions officially announced relate to:

SECTION 14

(1) Cacao nibs, cocoa nibs, cracked cocoa, identity; label statement of optional ingredients. (2) Chocolate liquor, chocolate, baking chocolate, bitter chocolate, cooking chocolate, chocolate coating, bitter chocolate coating, identity; label statement of optional ingredients. (3) Breakfast cocoa, high fat cocoa, identity; label statement of optional ingredients. (4) Cocoa, medium fat cocoa, identity; label statement of optional ingredients. (5) Low-fat cocoa, identity; label statement of optional ingredients. (6) Sweet chocolate, sweet chocolate coating, identity; label statement of optional ingredients. (7) Milk chocolate, sweet milk chocolate, milk chocolate coating, sweet milk chocolate coating, identity; label statement of optional ingredients. (8) Skim milk chocolate, sweet skim milk chocolate, skim milk chocolate coating, sweet skim milk chocolate coating, identity; label statement of optional ingredients. (9) Buttermilk chocolate, buttermilk chocolate coating, identity; label statement of optional ingredients. (10) Mixed dairy product chocolates, mixed dairy product chocolate coatings, identity; label statement of optional ingredients.

Under the above titles, regarding optional flavoring ingredients, it is necessary to set forth the flavoring ingredients as used, and prohibits the use of any flavor which imitates the flavor of chocolate, butter or milk.

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The labeling requirements relating to flavoring is as follows: (1) Ground spice. (2) Ground vanilla beans; and natural food flavoring oil, oleoresin or extract. (3) Vanillin, ethyl vanillin, coumarin, or other artificial food flavoring. (4) Butter, milk fat, dried malted cereal extract, ground coffee, ground nut meats. (5) Salt.

The definitions further provide: Section 14 (11) Sweet chocolate and vegetable fat (other than cacao fat) coating, identity; label statement of optional ingredients. This coating conforms to requirements for label statement of optional ingredients, prescribed for sweet chocolate by Section 14 (6) except: (1) In its preparation one or more vegetable food oils or fats, other than cacao fat, which oil, fat, or combination may be hydrogenated, and which has a lower melting point than cacao fat. (2) The requirement that milk constituent solids be less than 12 per cent by weight does not apply. Section 14 (12) Sweet cocoa and vegetable fat coating, identity; label statement of optional ingredients. This coating conforms to requirements for sweet chocolate by Section 14 (6) except: (1) In its preparation cocoa is substituted for chocolate liquor, in such quantity that the finished food contains not less than 6.8 per cent by weight of the non-fat cacao portion. This is calculated by subtracting from the weight of the cocoa used the weight of cacao fat, and the weight of the alkali and seasoning ingredients, if any, and dividing the remainder by weight of the finished food, and multiplying the quotient by 100. For the purpose of this section the term "cocoa" means breakfast cocoa, cocoa, low-fat cocoa, or any mixture of these. (2) When one, or any combination of vegetable fats is used, other than cacao fat, such fats or oils must be hydrogenated. (3) The requirement of Section 14 (6) that the milk constituent solids be less than 12 per cent by weight does not apply.

The above definitions and standards promulgated become effective April 1, 1945.

Ethyl Alcohol Outlook Good

According to Walter G. Whitman, assistant director of the Chemicals Bureau of the War Production Board, the most critical period of the industrial ethyl alcohol program appears to be past.

Estimates for industrial alcohol during 1945 are that industry will require 536,000,000 gallons of 190 proof quality. If all facilities are operated at full capacity the potential production will come to 607,000,000 gallons for the year. Government stocks of alcohol, including both working and reserve supply, amounted to 64,000,000 gallons as of Nov. 1.

The War Production Board has pointed out that the improved condition is largely due to reduced demands on alcohol for synthetic rubber production.

The yield of alcohol during the first nine months of 1944 was 274,000,000 gallons, and the grain required for conversion was 112,000,000 bushels. Of this grain 70 per cent was wheat, 3.7 per cent corn, 5.2 per cent rye, 9.9 per cent malt, and 5.2 per cent other grains.

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Canadian Maple Syrup

The production of maple syrup has been unusually good for the 1944 season in Canada. It shows an increase of 790,600 gallons over the preceding season, or 34.3 per cent, and an increase of 18.9 per cent over the ten-year average. The ten-year average is 2,600,000 gallons.

The 1944 harvest is estimated at 2,869,600 gallons of maple syrup, and 2,207,700 pounds of maple sugar (the latter being farm made), for a total of 3,090,400 gallons expressed as maple syrup. Even so, supplies were not enough to meet the demand, and all grades sold readily at ceiling prices.

Dominican Republic Cocoa

The Dominican Republic did not export an appreciable amount of cocoa from October 31 until the end of the year. The last of the spring harvest had been disposed of and the winter crop did not begin to come in until the end of December. Exports of the spring crop in October amounted to between 800 and 9000 metric tons, according to the Direction General de Estadictica. In contrast to past years, there is practically no carry-over.

Because of better climatic conditions, the winter harvest, although it will probably not amount to over 2000 metric tons, will be of better quality than was the previous crop. If normal rainfall continues, the spring crop should be of the same high quality, and amount to about 25,000 tons. At the present time stocks in the hands of chocolate manufacturers are small.

Chocolate production in the Republic is increasing. Cocoa exports were over two million dollars in 1942, over four million dollars in 1943, and an estimated value of $5,100,000 has been placed on the 1944 crop.

Argentine Alcohol Plants

Plans are under way for the construction of distilleries in Argentine for the production of anhydrous alcohol from corn. The plants will be built along rapidly flowing streams to simplify the disposal of waste products. Actual production will be done by private firms under Government contract. The plan is to sponsor up to 120,000,000 liters of alcohol, which is to have a minimum concentration of 99.8 per cent.

Much of the production is to be used as fuel, or in the manufacture of synthetic materials. The production and distribution of the alcohol has been placed under the supervision of the General Industrial Department of the Ministry of Agriculture. Corn will be supplied in seven metropolitan areas and at elevators in the production sections.

Madagascar Vanilla Beans

The vanilla bean crop in Madagascar is estimated for 1944 at 338 metric tons, about 40 per cent below the 562 metric tons harvested in 1943.

Reallocation of Sugar

The Office of Price Administration has announced a reduction of allotments of sugar for most industrial users of sugar to become effective with the first quarter of 1945.

Allotments to producers of bread, bakery and cereal products remain unchanged at 80 per cent of the 1941 use, and the quota to pharmaceutical manufacturers remains unchanged at 125 per cent of the same period. Other users, with one exception, have been reduced from 80 to 70 per cent of their 1941 figure.

The U. S. sugar inventory on January 1 was at a low level, with about a 450,000 tons loss in stocks during the year.

The exception mentioned above is in jams, jellies, etc.

Alcohol for Export

The Customs Bureau has amended its regulations on the drawback of taxes paid on alcohol which is used in the manufacture of flavors, pharmaceuticals and drugs for export.

Manufacturers who have claimed a drawback of $6.00 per gallon on foods and medicinal preparations for domestic consumption, according to T. D. 51154, may also apply for a drawback of $3.00 per gallon when these products are exported. Where no claim has been made the full $9.00 per gallon tax may be claimed at the time of export.

B-1 Complaint

A complaint has been issued, through the action of the Federal Trade Commission, against the B-1 Beverage Co., of St. Louis, which is charged with misrepresentation of its lemon-lime soft drink and soda water. It was charged that the labeling implies that vitamin B_1 is concentrated as a primary element of the drink, when actually the vitamin B_1 content was not sufficient to be of any therapeutic value.

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SOAPS

Soaps Packaged in Multiwall Paper Bags

After thorough analysis of soap powder, detergents, and washing compounds, a five-ply heavy-duty multiwall paper bag is designed as satisfactory container

by GARDINER LANE
St. Regis Paper Company, New York, N. Y.

SOAP powder, detergents and washing compounds have recently been added to the more than 300 various commodities packaged in heavy-duty multiwall paper bags. These shipping sacks are constructed of from 2 to 6 walls of specification kraft paper, depending upon the weight, density and physical characteristics of the product they are intended to carry. Each ply or wall of paper is properly arranged and fabricated in tube form, one within the other, so that each bears its share of the burden. Greater flexibility and strength are obtained by using a multiple number of walls in relatively light basis weights rather than a few walls of heavier paper. Special sheets can be incorporated to make bags resistant to such things as chemical action and moisture vapor penetration.

OTHER TYPES OF CONTAINERS

Prior to the use of multiwall paper bags for packaging soaps, detergents, etc., fabric bags, wooden barrels and steel drums were used for industrial shipments. The shortage of these containers, due to the war, hastened the adoption of the multiwall paper bag by the soap industry. The rapidity of the changeover into paper is indicated by the fact that the soap industry used 1,331,000 bags in the first eight months of 1944, or an average of 166,000 bags per month. During the full years of 1942, 92,000 bags were used.

The transition from other types of containers to heavy-duty multiwall paper bags was not just a matter of writing purchase orders but required the ingenuity of the engineers from both the soap and multiwall paper bag industries.

When packaging engineers from the St. Regis Paper Company, largest manufacturers of multiwall paper bags in the world, were called upon to develop containers for the packaging of soap powder, detergents and washing compounds, they first made a complete analysis of these products.

Because of the hygroscopic nature and high alkaline content of some of them, a bag was needed which would prevent the moisture from penetrating the walls of bags and coming in contact with the ingredients, thus preventing chemical action on the paper. A five-ply heavy-duty multiwall paper bag was designed with an asphalt laminated ply incorporated to prevent the penetration of the moisture through the body of the bag.

Multiwall shipping sacks are flexible packages in the sense that they may be made in a variety of constructions to fit variations in contents and in shipping and storage conditions. They are also mechanically flexible as compared with or distinguished from rigid containers.

After a series of tests, the conclusion was reached by both the multiwall paper bag and soap industries that the multiwall paper bag, as designed, would be entirely satisfactory.

Special bags were designed for the United States Army for the packing of washing compounds, taking into consideration the fact that the filled container would be subjected to outdoor storage. These bags were

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Storage of chemical products in multiwall paper bags

made of heavy kraft paper with two asphalt laminated sheets incorporated and both ends of the bag were dipped in a sealing compound solution.

It was then necessary to furnish efficient paper bag filling and closing equipment. St. Regis Paper Company engineers developed the 100-LS valve bag packer. This packing machine operates on a screw conveyor principle which weighs and packs the product into the valve type multiwall paper bag. This type of paper shipping sack is factory closed at both the top and bottom (by sewing) except for a small opening in one corner called the valve, through which the bag is filled.

The valve of the bag automatically closes by the internal pressure of the content, thus eliminating any other closing operation.

This packaging system, known as the St. Regis Valve Pack System, allows one operator to weigh, pack and close two to three 100-lb. bags per minute.

The advantages of the multiwall paper bag for packing soap powder, detergents and cleaning and washing compounds may be summed up as follows:

1. Eliminates siftage and loss of product through retention that occurs with the use of fabric bags. In storage and in transit, finely ground products will sift through porous fabric bags, therefore the full content of the package is not received by the consumer. Experiments made with sugar showed that the retention of this product in 10 emptied cotton-lined jute bags was 26 ounces — 10 emptied multiwall paper bags revealed a retention of only 1 4/10 ounces of sugar.

2. Compact storage of unfilled containers — multiwall paper bags are packed flat, therefore consuming little storage space—approximately 50,000 of these containers can be shipped in an ordinary box car. A soap manufacturer who adopted the multiwall paper bag found that it required such a small amount of storage space that it was possible to use the warehouse formerly required for the storage of wooden barrels for manufacturing purposes.

3. Less warehouse space required for the storage of filled containers. The flatness of the filled bags results in compact storage with no wasted space. Multiwall paper bags containing 100 lbs. of a product have been stacked 77 high without any damage to the bottom containers.

4. Less tare weight resulting in lower shipping cost. Empty multiwall paper bags weigh approximately one pound as compared with fiber drums, wooden barrels and steel drums, which weigh from 5 lbs. to 25 lbs.

5. Lower initial container cost. Multiwall paper bags range in price from 8c to 15c, depending upon their size and construction as compared with fiber drums, wooden barrels and steel drums, which cost from 60c to $1.75 each.

6. Lower filling and closing costs. With the St. Regis valve bag system, one operator will weigh, pack and close from 2 to 3 100-lb. bags per minute. The fact that the valve bag is closed automatically due to the pressure of the contents, eliminates the necessity for *any* closing operation. With the use of open-mouth fabric bags, fiber drums, wooden barrels and steel drums, operators are required to weigh the product, fill the container and then close the package.

7. Easier consumer disposal of empty containers. 100-lb. multiwall paper bags can be opened without any damage to the container and emptied clean. These bags can then be sold for reuse.

8. Lower unit rate resulting in easier handling. Multiwall paper bags containing 100 lbs. of a product are much easier to handle than filled fiber drums, wooden barrels and steel drums which weigh from 150 to 300 lbs.

9. Superior advertising medium. Multiwall paper bags can be attractively printed in 1, 2 or 3 colors.

In view of the successful results obtained from the use of multiwall paper bags in the soap industry, the post-war outlook for this type of container is extremely favorable.

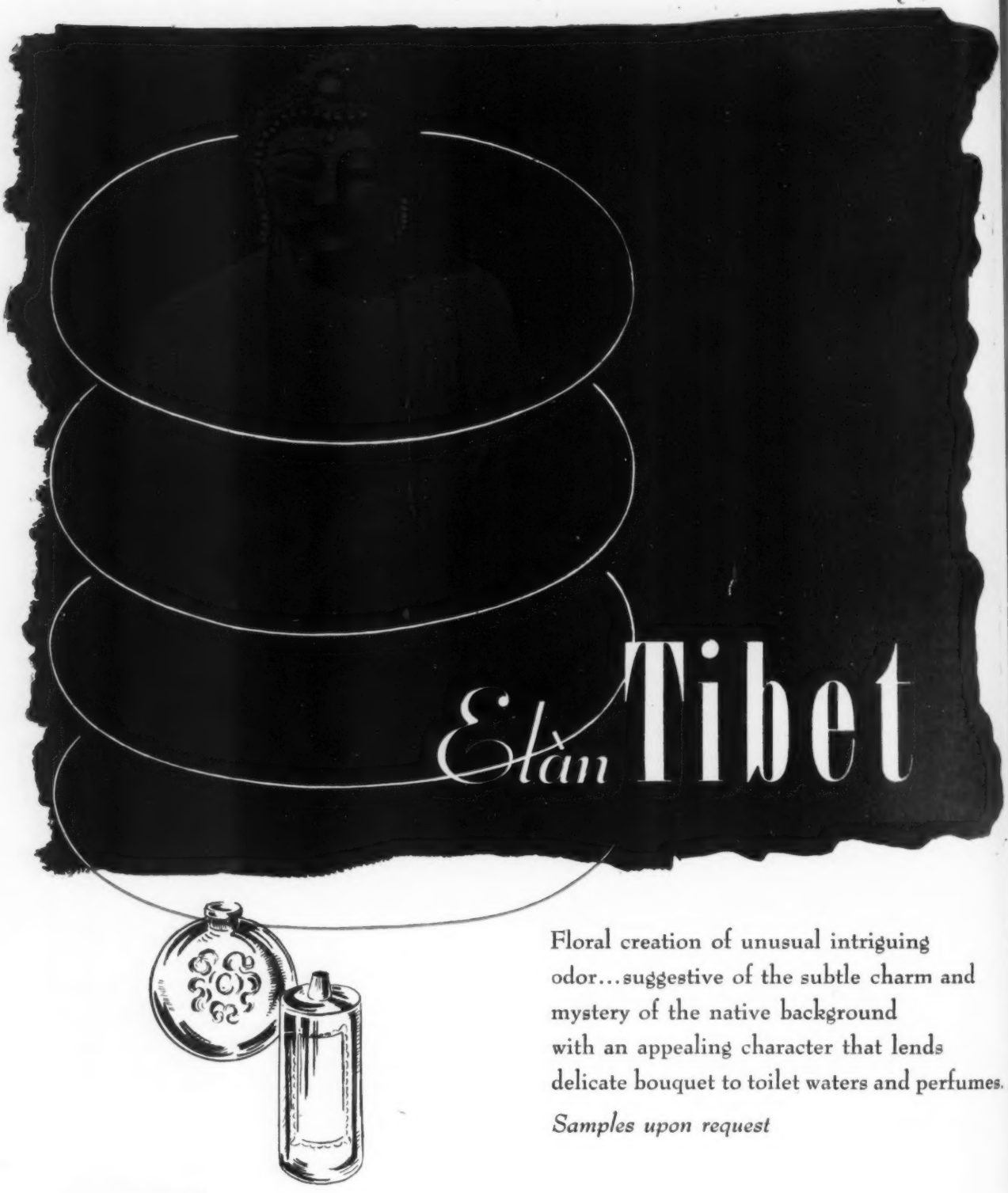
Detergents for Civilians

Allocations of synthetic organic detergents for essential civilian use in 1945 may be made in accordance with priority ratings obtained by customers, the War Production Board told the Synthetic Organic Detergents Industry Advisory Committee at a recent meeting.

At present each industry is allocated specific quantities of the detergents, WPB explained.

This new policy, giving the producer the authority to ship to customers on the basis of priority ratings, reflects a slightly easier supply of the detergents, WPB officials said. However, they pointed out, at any time WPB may directly allocate for an essential civilian requirement if the need arises.

Governed by Schedule 44 of Order M-300, synthetic organic detergents are used in the production of special soaps and rinses for the military and in the manufacture of rubber, textiles, dyestuffs, leather, metal pulp, paper, insecticides, soaps, germicides and dairy cleaners for essential civilian needs.



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by ARNOLD KRUCKMAN

THE widespread question about the effect of the shift in war prospects upon the supply of materials, such as alcohol, may be most clearly answered by a recitation of the facts which shape up the present alcohol situation. No formal Order has been issued at this writing, but it seems more than probable, according to reliable information, that the quota allocated to the toiletries, cosmetics and allied industries *for January* will be equal to one-third of the allocation for the last quarter of 1944. As was made clear late last year, alcohol allocation for an indefinite period ahead will be made on a monthly basis, and will be announced from month to month. Assuming the information informally received is correct, your quota for January will be equal to one-third of the gross total of all alcohol allocated for your use during the months of October, November, and December, 1944. This gross total was very generous, as you will find, including not only the regular quota, but the 25 per cent bonus over and above the original allocation and the additional volume of 2,000,000 gallons which were made available to all users of industrial alcohol on Nov. 13, 1944. This prospect for January certainly does not give much reason for gloomy forebodings. Apparently the most immediate problem will be to find the supplier who will sell you the alcohol. Under the present arrangement, following application of Public Law 458, the supplier is not compelled to supply you with a legal proportion of the quota allocation of alcohol. He may sell to whom he pleases and in the quantity he pleases. But by the same token you are permitted to shop for the alcohol where you please, and you may buy from whom you please. Within the limits of the alcohol available it places the business of buying and selling back on the prewar competitive basis. At the same time, if there are any flagrant violations of common equity in distributing the alcohol, WPB and other Government agencies will unquestionably step in and attend to the supplier who does not play fair.

ALCOHOL PLENTIFUL

The impression you get in Washington is that there is no prospect of any material diminution in the supply of alcohol in the immediate months ahead. The situation at this writing is regarded as promising volume in the quantities suggested in these columns last month. The supply of grain for the production of alcohol is enormous. There is no longer a great need of alcohol for the manufacture of synthetic rubber. The needs of the rubber industry are met from the products of petroleum. The producing capacities of the alcohol industry are vast. The manpower requirements are extremely limited and on the whole do not interfere with war production needs. Apparently actual production does not encroach to any appreciable extent upon war industries in terms of labor, facilities, or equipment, and supplies.

It must be taken into account, however, that the grain might be needed to feed more cattle and other livestock, which would subtract from the supply available to produce alcohol. And it is not improbable the sudden pressure on cargo space may interfere with the imports which have been regarded as part of the total resource which would make alcohol easier. For instance, ships are being taken off the regular run between U. S. ports and the ports of the Caribbean, which means there will be less sugar and molasses. The ships are very urgently needed to serve military requirements in Europe and in the Pacific. It is expected the need for shipping for purely war service will sharply increase for many months ahead. It also is likely alcohol will be needed to make more explosives, and to produce other war materiel. And the need for more manpower in other activities, as well as for actual armed service, always is possible. Above all it is wise to remember the present tendency in Washington is to create an acute consciousness of war needs by stirring the emotions. This reporter is unable to confirm the assertion, but it is generally assumed here the harsh tightening of rationing by OPA is not due primarily to a lack of food—WFA does not agree with the rationing as resumed—but is part of the socialization program to secure a more even distribution of food, and to provide work for the big OPA organization with its thousands of full-time and part-time workers, as well as volunteers, spread all over the country. The underlined scarcity also is expected to make the average man more war conscious.

It is important to understand this

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because it may hit your business in different directions. The principle involved, i. e. the psychological effect of a certain tension or scarcity or emphasis, may be applied to different services or supplies important to your business. The actual abundance or scarcity of the material or manpower or equipment may not have as much to do with your difficulties as the psychological aims in the minds of those who conduct the various phases of the war. It is generally assumed here we are now going into the toughest phase of the war so far as the homefront is concerned. We will undoubtedly be made to *feel* the war more directly and more intimately and frequently than we ever have before. The unknown quantity that confronts us is composed of the actual unexpected developments in the war itself and the unexpected actions agencies of Government may feel necessary to initiate to put fighting speed in the people back home. This reporter has expatiated upon this quantity at length because it must be taken into consideration in planning for the future. Literally no one can sincerely advise you whether it is best to depend upon such promising prospects as seem forecast by the present optimism about alcohol, or whether it is best to dilute the hopefulness with some pessimism and to make plans with an eye on a storm cellar. Your own deductions from the facts given should be as sound as any we can make for you here.

LIMITATION ON LEAD

Lead for use in making collapsible tubes was placed under limitation late in December, to an extent that provides the material primarily for the manufacture of tubes for military supplies. The revised Order M-38 provides civilian use of the metal must be limited during the first quarter of 1945 to an amount equal to 30 per cent of the lead used during the first six months of 1944, or equal to 60 per cent of the total used during the whole calendar year of 1944. Government reports the estimated requirements for 1945 are 1,150,000 tons as compared with 970,000 tons of total supplies. Government has less than a month's reserves, and the reserves have been decreasing at a rate of from 15,000 to 25,000 tons per month for the past five months. The annual use of lead in collapsible tubes—95 per cent of all tubes used by the industry—totals approximately 22,000,000 pounds. It is anticipated the restrictions will reduce over-all lead consumption by more than 20% from the 1944 level.

MILITARY NEED FOR TIN INCREASES

On January 1, 1945, the metal can Order M-81 was made effective in an amended form which permits your industry to use blackplate for cans and for closures without any limitation. Blackplate is now available for the manufacture of cans you may be able to use as a substitute for paper and other materials. WPB issued two warnings; the first was to caution packagers that metal containers might not be available for some time to replace present containers, apparently having in mind that it will take some time to make the mechanical production readjustments, and that the producers will have the inevitable manpower problems. The second warning made clear that material supply is still uncertain, and that there may be some shift any time without much warning which may again sharply cut the supply of steel which is now in surplus. There is actually twice as much steel, especially sheet steel, as may be used by the industries able to process it. Manufacturers of cans are cautioned, in the Order, to make sure that cans for military requirements and for food are given priority over any others. All restrictions on tin for containers are continued. The use of tin for containers in your industry has practically been eliminated. Military needs are constantly increasing in the form of containers, bronzes, babbitt metal, solders and tin foil. It is estimated no substantial improvement in the supply of primary tin may be expected until two years after the sources are recaptured from the Japanese in the Pacific.

Closures of blackplate have been made unlimited in connection with the relaxation in the restrictions on glass containers under the amendment to L-103-b. The toiletries, cosmetic and allied industries may use 100 per cent of the number of glass containers used in 1944, or 130 per cent of the quota permitted in 1943. They may have the use of the containers in their inventory plus 130 per cent of the number used in 1943. But any inventory borrowed against the quota allowed for 1945 must be made up.

Any relaxation in paper products seems remote. War supplies must be increased to meet the expanding needs in both the Pacific and Europe; in addition the liberated areas are expected to be supplied with pulp by the U. S. and Canada, in 1945; such shipments will be subtracted from U. S. civilian supplies, according to the Department of Commerce. A limited quantity of glassine, greaseproof, and vegetable parchment paper has been made available to those who can justify a claim under an amendment to Order M-286.

REPORT FROM BARBER

Chief T. W. Delehanty of the Drugs and Pharmaceutical Unit, Bureau of Foreign and Domestic Commerce, late in December received the first preliminary report from Lester A. Barber, who was jointly sent to France by the Department of Commerce and the State Department to report on the availability of essential floral oils. Barber is assistant chief of the Drugs and Pharmaceutical Unit. The details of the report as issued by Chief Delehanty may be found on page 40 in this issue of THE AMERICAN PERFUMER. Barber apparently has found that the absence of the usual organized channels of commerce and communication in France perforce make his preliminary report very uncertain. It is apparent he does not find export on any basis comparable to prewar standards in prospect. He found French firms capable of providing the products of the Gras region only to the tentative extent of 10 per cent to 20 per cent. If the French industry were capable of finding bottles and other trade necessities it is doubtful any essential oils would be on the market for American needs. He reports only lavender and lavandine may possibly be supplied in quantities ranging from 50 per cent to 100 per cent. The jasmine and the rose crop in the Gras region is uncollected, due to lack of labor and price uncertainties. He found there was an almost complete lack of much required fertilizer, and that the usual help of women in the Gras region was difficult to obtain because they had been attracted by high wages in other

work, elsewhere. Prices are high. Apparently the peasants demand much higher returns, and do not seem as ready to follow the normal course. Barber has found the predominant information seems to indicate that the factories in the Gras region have not been damaged. The report indicates that Barber is making a personal check of the actual conditions in the Gras region, and will report further.

Meanwhile the question of buying any essential oils Barber may find available has been further answered by FEA. Unexpectedly, almost without knowledge on the part of the gentlemen in FEA who had been handling the negotiations, the U. S. Commercial Company, a subsidiary of FEA, informed the Department of State it had chosen Mr. Gerald M. Strauss to go to France to buy any essential oils available which members of the industry in America might wish to procure. The Department of State was advised Mr. Strauss was chosen with the approval of the essentials oils industry in the United States, and that he was regarded as qualified and equipped to act as procurement agent. Little is known here about Mr. Strauss except that he is reported at one time to have been connected with the toiletries and cosmetics industry in France. It was made very clear that the purchasing of essential oils would be only one of a number of procurement tasks he would be expected to perform. The other responsibilities apparently are not connected with essential oils.

Strauss is now reported to be in London, where he was sent first in order to meet with the United Kingdom Mission which has been appointed to go to France for a similar purpose. It is expected he will join the British Mission. There are some indications that he will be expected to cooperate with Barber, probably to obtain the benefit of Barber's studies and Barber's counsel. The Department of State apparently regards Barber as the best equipped man connected with Government now in France capable of efficiently handling the technical as well as human and economic problems connected with the industry. The program is said to be for Strauss to act as buyer for the private account of any American house, which wishes to buy the French oils. Under war conditions it is said to be within the scope of the legal powers of employees of FEA, or its subsidiaries, to act as purchasing agents for American commercial firms and to buy for their private account. In effect such transaction would not make the U. S. Government responsible for any purchases made by its representative. The risk would be entirely that of the purchaser in America. This manner of handling the transaction also would by-pass the requirement under Public Law 458. The requirement of P.L. 458 would compel the Government agency buying on public account to make its purchases available to all business concerns which might use the material imported by the Government and paid for originally by Government funds. There appears to be some doubt in the minds of some Government officials whether or not, under the circumstances involving the terms of Public Law 458, Mr. Strauss will have a clear-cut task. It is not plain from any information yet received whether purchases in France are made directly from the private firm or person, or whether the transaction must be handled through the agency of the de facto French Government.

Lee Marshall, for several years a top official of WFA with whom the toiletries and cosmetic industry have had various connections, is expected to leave his job shortly to return to private industry. In the recent shuffle of WFA, Marshall was placed at the head of the new Office of Supply and the new Office of Marketing Service. Both divisions are concerned with some aspects of the toiletries and cosmetic and flavors industries. When Marshall leaves, which is expected shortly, it is forecast here that C. W. Kitchen, now deputy under Marshall, will become head of the Office of Marketing Service; and Lieut.-Col. Ralph Olmstead, now in charge of the Office of Supply, will become its head. A. L. Kalish, Chief of the Essential Oils Section, continues the same duties, merely changing the nomenclature of the supervisory division to that of the Office of Marketing Service.

GEORGE RECONVERSION LAW EXPLAINED

The theory of the George Reconversion Law, Public Law 458, is that any material allocated by the Government, being obviously short in supply, must be made available to all who can make an end-use of it as a commercial ingredient. This means that any distributor, or user, whether established on an historic basis in the business, or whether the distributor or user has just established himself in the business, is entitled to a share of any material under allocation. This would mean when any more lemon oil or similar products, are made available under an allocation, either imported or domestic, the products must be made available pro rata to all those who are capable of handling or using the product. It is probable the Law will be the subject of considerable debate and many interpretations. Already the contention has been set up that the Law has been met when the pro rata for a division of an industry is allocated to the distributors traditional to the industry, and that they may dispose of the material as they see fit; in other words, they may legally sell 90 per cent of the material to one customer if they so elect. It is anticipated clarifying amendments will be introduced in Congress.

WFA already has reduced the quantity of oils and fats which may be used in various coatings. It is predicted all soap may be short before this year ends. Prices of oils and fats are expected to remain at ceilings all this year. We are apparently expected to supply some of the shortages in Europe. Less phosphorous is predicted for soap. Manufacturers of perfumes and other toiletries, located in Minnesota, started 1944 with an inventory of 2,373,652 glass containers. On October 1, 1944, they had 2,511,121 containers. They were charged by WPB with violation of Order L-103-b, and after negotiations with the WPB Compliance Division agreed to reduce the use of new glass containers 726,005 units by the end of last year, and further agreed to receive no additional containers until the inventory on hand on October 1 was reduced to 1,000,000 containers of all types and kinds. . . . WPB expects shipments of beeswax from India and Turkey, to supplement present supplies from South America. . . . Tangerine syrup, as a beverage base, has been successfully developed by U. S. Citrus Products Station, Winter Haven, Florida, it is reported.

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U.S.I. CHEMICAL NEWS

January ★ A Monthly Series for Chemists and Executives of the Solvents and Chemical Consuming Industries ★ 1945

Two New Resins Round Out U.S.I. Replacement Line

Complement Existing Resins in Solving the Shortage of Alkyds

While no relief is yet in sight for the currently tight situation on both natural and synthetic resins, there are some bright spots for manufacturers of civilian coatings. Not the least of these is U.S.I.'s non-critical S&W Aroplaz 1306, introduced some months ago and now complemented by S&W Aroplaz 1305 and 1309. These newer resins are designed specifically for those who want the harder, less flexible films produced by resins of lower oil content and who prefer not to blend with cold-cut solutions.

Gloss and Color Retention

S&W Aroplaz 1306 and the newer companion resins can now be used as alkyd resin replacements with a minimum sacrifice in most characteristics. Initial color is very pale and color retention is good. Gloss and gloss retention are outstanding. Drying, although not equivalent to an alkyd, is satisfactory for most jobs.

Versatility of Aroplaz 1306

Since all three of the new resins are soluble in all petroleum and coal-tar hydrocarbons,

(*Continued on next page*)

Wide Range of Products Made from Sub-standard Oranges

The production of new products from oranges, below fresh-fruit standards, has grown to the point where one orange products plant in California has had to expand its facilities to care for double the tonnage of oranges. Among the plant's products are oil-well drilling compounds, synthetic rubber anti-stick agents, and vitamin concentrates, most of which are produced from residues formerly discarded as waste.

Part of the pulp is processed to extract the pectin. In this process, pulp is treated with hydrochloric acid, and pressed. The liquid obtained is passed through a filter press, and the filtrate concentrated and treated with ethanol to yield a jelly-like precipitate. After separation of the alcohol in a drain tank, the mass of precipitate is broken up. The pieces of pectin are hardened, ground, dried, and bagged for shipment. Pulp residue is sold for feed.

Production of old-line by-products of oranges is not decreased by this further processing.

Three pounds of washed precipitated pectin (left) are required to yield a few ounces of dry, powdered pectin (right). Photo from The Exchange Orange Products Co., Ontario, Cal.

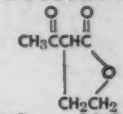
Interesting Future Predicted for Four New Organic Chemicals

Novel U.S.I. Intermediates Promise Valuable Short Cuts in the Synthesis of Drugs, Medicinals and Specialties

Taking their places well up on the list of war-born organic intermediates which are both paving the way to new products, and shortening the synthetic route to old ones, are the four new chemicals whose structural formulas are shown below. These new intermediates are methyl cyclopropyl ketone, alpha acetyl butyro lactone, acetyl propyl chloride, and 5-diethylamino pentanone-2. Products of U.S.I. pioneering in the application of the Claisen-type condensation, two of these new intermediates are already being used in substantial quantities. The synthesis of vitamin B_1 makes use of alpha acetyl butyro lactone, while 5-diethylamino pentanone-2 is an intermediate in the manufacture of atebrin.

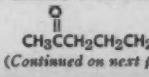
Below are the physical constants of each of these new chemicals. Samples are available on request.

α-ACETYL BUTYRO LACTONE

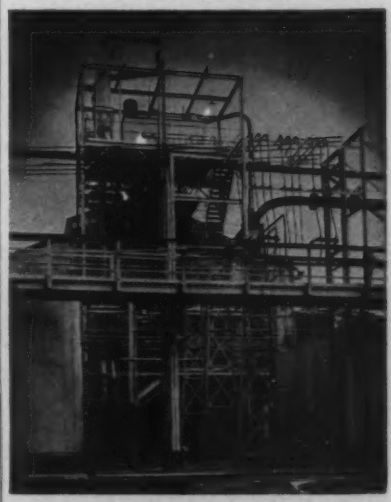


Mol. wt., 128. Sp. gr., 1.185-1.189 @ 20/20° C. Refractive Index, 1.460 @ 20° C. Boiling point, 121-122° C. @ 10 mm. Hg. abs. Colorless liquid. Suggested Uses: Organic synthesis.

ACETYL PROPYL CHLORIDE (5-Chloro Pentanone-2)



(*Continued on next page*)



U.S.I. plant where acetyl propyl chloride is manufactured from α-acetyl butyro lactone. The acetyl propyl chloride is then reacted, via a Claisen condensation, with diethyl amine to give 5-diethylamino pentanone-2. The refining still and column can be seen in the foreground.

A. E. Tongue to Direct U.S.I. Anti-Freeze Sales

Arthur E. Tongue

Arthur E. Tongue has been appointed Manager of Anti-Freeze Sales for U. S. Industrial Chemicals, Inc. He will be in charge of the sale of U.S.I.'s Super-Pyro Anti-Freeze, as well as its other automotive products.

Mr. Tongue comes to U.S.I. from the Chrysler Corporation, where, for the past eight years, he was in charge of Advertising and Sales Promotion for the Chrysler line of cars.

Butanol Reported To Boost Penicillin Yield

While penicillin can be extracted by ether, amyl acetate or chloroform, provided the aqueous solutions are sufficiently acid, penicillin is rapidly destroyed in a highly acid environment. Needed, then, is an extraction solvent which will function in less highly acidified solutions.

Research, recently reported by an English scientist, has shown that penicillin is most stable at a pH of 6.4; it has been discovered that normal butyl alcohol will efficiently extract the penicillin from such a medium.

Although these findings are based upon small-scale tests, the improvement in efficiency of the new method is described as "enormous."

Surface Hydrolysis Makes Plastics Solvent Resistant

Cellulose ester plastics exhibit a tendency to swell, distort, and become tacky, when brought into contact with certain solvent plasticizers, and solvents such as acetone.

It has been discovered that after surface hydrolysis of the plastic, the surface thus converted back toward cellulose is highly resistant to the action of such solvents. Surface hydrolysis is obtained by dipping the plastic in a solution of sodium hydroxide and a softening agent, such as alcohol.

Plastics so treated will withstand cleansing operations impracticable for untreated plastics and the physical qualities of the plastic, are apparently unaffected by the treatment.

ADVERTISEMENT—*This entire page is a paid advertisement.*

January ★ **U.S.I. CHEMICAL NEWS** ★ 1945

Improvements Made in U.S.I.'s Curbay B-G

With its riboflavin potency improved to 150 micrograms per gram, new, improved Curbay B-G assumes an even more important place among poultry and livestock feed supplements.

In addition to its increased riboflavin content, Curbay B-G contains generous amounts of other B-complex factors: pantothenic acid, niacin, pyridoxine, biotin, as well as folic acid. Curbay B-G is a very economical source of these factors.

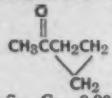
A new manufacturing process has also greatly reduced the product's tendency to dust.

New Organic Chemicals

(*Continued from preceding page*)

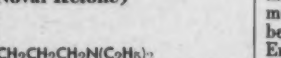
Mol. wt., 120.5 Sp. gr. 1.054 @ 20/20° C. Refractive Index, 1.440 @ 20° C. Boiling point, 71-72° C. @ 20 mm. Hg. abs. Colorless liquid. Turns dark on storage in presence of air. Suggested Uses: Organic synthesis.

METHYL CYCLOPROPYL KETONE



Mol. wt., 84. Sp. Gr., 0.903 @ 20/20° C. Refractive Index, 1.426 @ 20° C. Boiling point, 111-113° C. @ 760 mm. Hg. colorless liquid. Suggested Uses: Organic synthesis.

5-DIETHYLAMINO PENTANONE-2
(Noval Ketone)



Mol. Wt., 157. Sp. Gr., 0.865 @ 20/20° C. Refractive Index 1.435 @ 20° C. Boiling Pt., 90-92° C. @ 20 mm. Hg. abs. Colorless liquid. Turns dark on storage in contact with air. Suggested Uses: Organic chemical synthesis.

Claims Color-Fast Sizing For Paper and Textiles

In the past, resin emulsions used for sizing paper, fabrics, leather and other flexible materials have been subject to two serious defects, according to a recently granted patent. Such emulsions are claimed to yellow with age, and under certain conditions to become relatively inflexible.

According to the inventors, emulsions of hydrogenated ester gums are free from both of these adverse factors, being compatible with most plasticizers and overcoming the tendency to yellow with age.

The hydrogenated ester gums used in these emulsions are prepared by hydrogenating rosin and then reacting it with ethanol, diethylene glycol or other aliphatic alcohol. Another method of preparation first reacts the rosin with the alcohol to form ordinary ester gum, then hydrogenates the ester gum.

Two New Resins

(*Continued from preceding page*)

finishes prepared with them are easily adjusted for brush, spray, dip or other application method. Set time of films may be controlled by the selection of solvents from among a wide range. Acid value has been lowered so that these resins may be used with any pigment except a highly reactive one.

Because of their oil content, these resins are particularly suitable for use as general-purpose vehicles in architectural finishes, enamels for interior use, and exterior applications where maximum durability is not a factor, and in metal-finishing enamels. However, they may be modified to yield other characteristics. Enamels of high durability for exterior finishing may be produced by the addition of bodied oils, while addition of Ester Gum or other hard resins, cold-cut, produces extremely hard films for use as furniture or floor varnishes and toy and hardware enamels.

RESIN SPECIFICATIONS

AROPLAZ	1306 65% SOLIDS in MS	1306 75% SOLIDS in MS	1309 75% SOLIDS in MS	1305 85% SOLIDS in MS
Acid Value (Plastic)	10-15	10-15	10-15	10-20
Color (GH 1933)	7-9	7-9	8-10	8-10
Viscosity (GH)	T-V	Y-Z_3	W-Y	Z_1-Z_4
Weight/Gal. @ 25C.	7.6 lbs.	7.8 lbs.	8.0 lbs.	8.2 lbs.
Reportable Oil Content (Prox.) on plastic resin	65%	65%	60%	44%

TECHNICAL DEVELOPMENTS

Further information on these items may be obtained by writing to U.S.I.

A new synthetic detergent of the substituted sodium alkyl sulfonate type has been announced. The product contains 35% organic material and will be of interest to those requiring high water solubility with good detergent, emulsifying and wetting properties. **(No. 888)**

USI

Simulated hammered finishes, claimed to produce hammered silver, copper and bronze effects on most metals or phenol-formaldehyde molded plastics, are back on the market for industrial application. **(No. 889)**

USI

Bonding plastics to a wide range of materials is the announced purpose of a new adhesive line. Among the materials mentioned are glass, metals, rubber, fabrics, wire, lead and tin foil, and cellulose. **(No. 890)**

USI

To fill drums in a horizontal position is the purpose of a new funnel offered to save time and labor in this otherwise troublesome job. The new filler clamps to the drum chine; can't tip or spill. **(No. 891)**

USI

Metallic, high-temperature packing designed for aircraft, is now available for general industrial use. According to the manufacturer, this woven metal tape will give service at 2,000 deg. F., is corrosion-resistant and non-magnetic. **(No. 892)**

USI

An edible emulsifying agent, claimed to be nontoxic, practically odorless, dispersible in hot water, and completely soluble in alcohols and hydrocarbons, is announced. Product is thought to be of special interest to the food, pharmaceuticals, and cosmetic industries. **(No. 893)**

USI

To color metals and alloys of almost any type, with almost any color, and in iridescent and matte effects, a new line of coloring salts and solutions is offered. Among the features claimed are increased corrosion resistance. **(No. 894)**

USI

Protection against skin irritation is promised by the manufacturer of another new cream, who describes it as providing the skin with a water-removable armor against industrial irritants. **(No. 895)**

USI

Marking ink in powder form, packed in containers which hold enough to make one quart, is claimed to wash out of fabrics on which it may be spilled. In blue, purple, green and red. **(No. 896)**

USI

Instant anti-skid protection is described as one of the qualities of a pair of new dry-cleaners for floors. Both are said to reduce accidents and fire-hazard. **(No. 897)**

USI

To protect uncured rubber and oils from the deleterious action of sunlight, a new alkylated polyhydroxy phenol is on the market. **(No. 898)**

USI

Tough paperboard drums, claimed to have held up under drop tests more severe than ICC tests, are offered for packing liquids. **(No. 899)**

U.S.I INDUSTRIAL CHEMICALS, INC.

60 EAST 42ND ST., NEW YORK 17, N. Y. — BRANCHES IN ALL PRINCIPAL CITIES

ALCOHOLS
Amyl Alcohol
Butanol (Normal Butyl Alcohol)
Fusel Oil—Refined
Ethanol (Ethyl Alcohol)
Specially Denatured—all regular and non-regular formulas
Completely Denatured—all regular and non-regular formulas
Pure—96% proof, C.P. 96%
Absolute
*Super Pyro Anti-freeze
*Solox Proprietary Solvent
*ANSOLS
Ansol M
Ansol PF

ACETIC ESTERS
Amyl Acetate
Butyl Acetate
Ethyl Acetate
OXALIC ESTERS
Dibutyl Oxalate
Diethyl Oxalate
PHTHALIC ESTERS
Diamyl Phthalate
Dibutyl Phthalate
Diethyl Phthalate
OTHER ESTERS
*Diacol
Diethyl Carbonate
Ethyl Chloroformate
Ethyl Formate

INTERMEDIATES
Acetoacetanilide
Acetoacet-ortho-anisidide
Acetoacet-ortho-chloranilide
Acetoacet-ortho-toluidide
Acetoacet-para-chloranilide
Ethyl Acetoacetate
Ethyl Benzoylacetate
Ethyl Sodium Oxalacetate
ETHERS
Ethyl Ether
Ethyl Ether Absolute—A.C.S.
FEED CONCENTRATES
*Curbay B-G
*Curbay Special Liquid
*Vacatone 40

ACETONE
Chemically Pure
RESINS
S&W Ester Gums—all types
S&W Congo Gums—raw, fused & esterified
S&W *Aroplaz—alkyds and allied materials
S&W *Arochem—pure chemicals
S&W *Arochem—modified types
S&W Natural Resins—all standard grades
OTHER PRODUCTS
Collodions
Ethylene
Ethylene Glycol
*Indalone
Nitrocellulose Solutions
Urethan

*Registered Trade Mark

NEW PRODUCTS AND PROCESSES

New Water Filtration Process

Ordinary water can now be transformed into the chemical equivalent of distilled water by a simple filtration process developed by American Cyanimid and Chemical Corporation. With units, trademarked Filt-R-Stil, water which is virtually mineral-free is made available. The principle of the Filt-R-Stil is one of filtration utilizing melamine-derived and other resins.

Water is passed through beds of these ion exchange resins which transform the dissolved salts in the water to the corresponding acids and in turn absorb the acids.

The units are made in different sizes and capacities to meet various requirements, with capacities ranging from 8 gallons per hour up.

The cartridges containing the resins may be renewed like flashlight batteries, or a system may be installed for reactivating the resins to permit their being used over and over again.

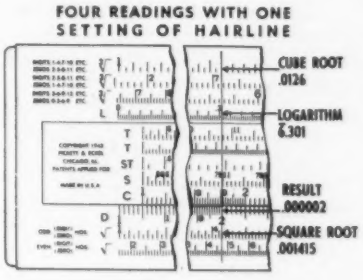
New Split-Leg Apron

A new split-leg apron is announced by Canvas Products Corp., under the name "Campro." Its manufacturers claim for it that it is easier to slip on and off than overalls, it furnishes the around the leg protection that is important in handling kegs, boxes, etc. It is especially designed for men doing heavy work, who need a durable apron to protect clothing. It extends far below the knees, has plenty of pocket space with pockets that do not pull loose, and is comfortable to wear.

New Slide Rule

A new slide rule has made its appearance. This rule, manufactured by Pickett & Eckel, enables users with a limited mathematical background to solve and place the decimal point in problems containing cube root, square root, log and trig factors.

The Decimal Point Locator and Slide Rule is eleven inches long, two inches wide and ⅛ inch thick. It is



Slide Rule

constructed of Sorex tag lithographed, varnished and bonded. It comes complete in box with coat-pocket carrying case and Manual of Instructions.

Printed Cellophane

A new line of printed transparent "Flimonize" Cellophane tape is now available without priorities. The tape, manufactured by International Plastic Corporation, is clearly transparent with high tensile strength. A minimum order of nine rolls is required.

Name, trade mark, instructions or advertising message, in black only, may be printed in one line on the tape ½ inch wide, in two lines on tape ¾ inches wide, or in three lines on tape 1 inch wide. The label may be 1 inch, 1½ inch, 2 inches, 3 inches, or 4 inches in length, including space for "tear-off" between labels. Rolls fit standard dispensers.

Air Cargo Packing

A special division for air cargo packing and distribution has been inaugurated by the Manhattan Storage & Warehouse Co. The facilities, experience and personnel of the concern at the disposal of manufacturers for providing air cargo shipments with scientifically correct packaging to insure lightness, strength and weather resistance are described in a 4-page folder which will be sent to anyone for the asking.

New Plastic Glaze

A new plastic label glaze has been put on the market by Eimer and Amend. Its makers claim for the new label glaze that it provides a clear, protective coating that will not peal nor discolor. The glaze is made of a polymerized resin dissolved in a quick-evaporating solvent.

Catalogs

A booklet prepared by the Engineering Research Committee of the Multiple V-Belt Drive Association gives 19 reasons why multiple V-belts are used in factories. Copies may be obtained without cost.

The 1945 edition of "Chemicals by Glyco" has just been published. A number of additional items are described, as well as the usual esters, synthetic waxes, emulsifying agents, etc. A copy may be obtained without charge by chemists, technicians and purchasing agents. The Glyco Products Corp. is the publisher.

Pitman Publishing Co., New York, N. Y., has issued a catalog of technical books. A copy may be obtained without cost.

Givaudan-Delawanna, Inc., New York, N. Y., has prepared a 32-page booklet for distribution among its employees. The purpose of the booklet, entitled "You and Your Job," is to help workers learn more about the organization for which they work. The writing was done by Edward Sagarin.

A new catalog of technical books has just been issued by The Chemical Publishing Co., Brooklyn, N. Y. This catalog includes the latest books on chemistry, technology, physics, general science, engineering, foods, formularies, drugs and cosmetics, etc. Information given on books includes date of publication, price, number of pages, detailed descriptions and full table of contents. A copy will be sent free upon request.

Selected Book List

COMMERCIAL METHODS OF ANALYSIS. By Foster Dee Small & Frank M. Buffen. Just published. This valuable book covers practical analysis of typical products and gives procedures and calculations for hundreds of determinations—plus many pointers on general approach to analysis of unknown samples. Special emphasis is laid on time-saving methods in line with economic standards of the efficient commercial laboratory. Of constant use as quick reference to experienced chemists—invaluable to new chemists. 753 pages. 152 illustrations . . . $6.00 postpaid.

THE LAW OF FOODS, DRUGS & COSMETICS. By Harry A. Toulmin, Jr., J. D., Litt. D., LL.D. With introduction by Hon. Paul V. McNutt, former Federal Security Administrator. All manufacturers need a copy of this book. A practical working manual. Contains official government regulations, FDA trade correspondence rulings, official forms and charts. Gives thorough analysis of the decisions relating to: False and Misleading Advertising, Unfair Competition and Misbranding, Informative Labeling. One large volume, 1460 pages . . . $17.50 postpaid (will be kept up-to-date with pocket supplements for modest additional charge).

HAIR-DYES & HAIR-DYEING. By H. Stanley Redgrove & J. Baru-Woollss. Completely revised edition of this standard work. The most complete treatise on subject yet written in any language . . . $5.00 postpaid.

THE COSMETIC FORMULARY. Vol. 1. By H. Bennett. The most comprehensive compilation of practical, commercial and experimental cosmetic manufacture. No theory. For chemist, manufacturer, student, experimenter. Hundreds of valuable formulae. Working methods and equipment. Sources of raw materials, giving trade names and rarer products . . . $3.80 postpaid.

PRACTICAL EMULSIONS. By H. Bennett. Gives proper understanding of the technique and formulation that is necessary to produce a good emulsion. Covers all types of emulsions . . . $5.00 postpaid.

THE CHEMISTRY & MANUFACTURE OF COSMETICS. By Maison G. de Navarre, Ph.C., B.S., consulting Chemist to the Drug and Cosmetic Industries, Member of the Faculty of Wayne University. A new kind of cosmetic book in which an expert gives you tested formulas and practical suggestions for making all up-to-date cosmetics—based on complete fundamental knowledge. Gives the basic properties, including standards and specifications, for all raw materials. Describes the proper equipment for every purpose and operation, showing you every step in its operation and use. Tells you how to comply with governmental regulations at every point. Includes a wealth of material found in no other book . . . Illustrated . . . 745 pages . . . $8.00 postpaid.

CONDENSED CHEMICAL DICTIONARY. 3rd Edition. Compiled and edited by Staff of the Chemical Engineering Catalog. 551 pages. Thumb index. A shortcut to specific information concerning 12,000 chemicals and raw materials. Designed for the practical use of all who are required to know the properties and industrial uses of chemical products . . . $12.00 postpaid.

COSMETIC DERMATOLOGY. By Herman Goodman. 54 chapters covering the field from acne to vitamins and hormones . . . $6.50 postpaid.

COSMETICS & HOW TO MAKE THEM. By Robert Bushby. This simply-written practical guide for beauty specialists, hairdressers and all others concerned with preparation of face powders, vanishing creams, nail polishes, rouges, lipsticks and other cosmetics is a useful handbook for those who have had no previous knowledge of chemistry. Contains easy-to-follow formulas and recipes. Illustrated . . . $3.00 postpaid.

THE PREPARATION OF PERFUMES & COSMETICS. By J. P. Durvelle. Translated from 4th French edition by Ernest J. Parry. Partial contents: Natural Raw Materials Used in Perfumery; Synthetic Perfumes; Manufacture of Perfumed Products; Preparation of Aromatic Waters, Extracts, Infusions & Tinctures; Compound Extracts known as Bouquets; Toilet Waters; Cosmetics; Softening Cosmetics; Depilatories; Incense, Fumigators, Etc.; Toilet Soap & Various Products; Specialties; Fruit Ethers . . . 427 pages . . . $10.00 postpaid.

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AMONG OUR FRIENDS

▸ J. B. Beecher, for many years in charge of Eastern sales with B. T. Babbit Co., is now associated with American Soap Powder Works, Inc., Brooklyn, N. Y., as sales and advertising manager.

▸ George Whitley has been appointed export manager of the Sherwood Refining Co., widely-known refiners at Warren, Pa., of various ceresino white mineral oils and petrolatums, H. H. Sherwood, president, has announced. The appointment took place November 1. Mr. Whitley has devoted practically his entire career to export management, and has traveled extensively in foreign markets. He was for twenty years export manager for Standard Coated Products Corp. He will make his headquarters in the executive offices of the Sherwood Refining Co. in Englewood, N. J.

George Whitley

▸ Lieutenant Commander Robert L. Cahill, U.S.N.R., after a tour of active duty with the Navy since 1942, has resumed his post as vice-president of Orbis Products Corp., New York, N. Y.

▸ George N. Cox has just completed a business trip through the Southwest. He is associated with Standard Synthetics, Inc., New York, N. Y.

▸ John H. Curry, former vice-president in charge of sales, was recently elected president of the Ogilvie Sisters Sales Corp., New York, N. Y. Mr. Curry, who thus fills the position left unoccupied since the death of Jessica Ogilvie, founder of Ogilvie Sisters, is well known in the drug and cosmetic fields. A member of BIMS and Foragers of America, he has been associated with the Ogilvie Sisters Hair Preparations organization for the past twenty-five years.

▸ Henry D. Faxon of Kansas City, Mo., regional vice-president of McKesson & Robbins, Bridgeport, Conn., in charge of the Central West District, heads a group of 88 veteran employees being honored at ceremonies throughout the country for their long service records. Mr. Faxon, and eight others have completed 50 years of continuous service with the division of the company.

▸ Arthur H. Ospenson has recently joined the New York staff of Magnus, Mabee and Reynard, Inc., New York, N. Y.

▸ F. W. Fitch, F. W. Fitch Co., board chairman, has donated $100,000 to Deake University, Des Moines, Iowa, for a new pharmacy building. The new building will be erected as soon as materials and labor are available.

▸ Louis Bezard, who joined Schiaparelli Parfum, Inc., New York, N. Y., in September, as production and export manager, has been elected vice-president in charge of art and purchases.

▸ Helen Blake has been appointed sales manager of Ann Haviland, New York, N. Y., it was recently announced by Gaston T. deHavenon, president of the firm. Miss Blake was formerly associated with Elizabeth Arden. This association was maintained for eight years. Previous to her connection with Elizabeth Arden, Miss Blake was Toilet Goods Buyer of the Brigham Company in Springfield, Mass.

Helen Blake

▸ Henry A. Weidman was elected vice-president of P. R. Dreyer, Inc., New York, N. Y., prominent essential oils and aromatics chemical firm at a recent stockholders' meeting. He became secretary of the organization in July, 1938. Previous to his joining P. R. Dreyer as sales manager in 1936, he had been associated with McKesson & Robbins in the purchasing department, with E. Fougera & Co., as purchasing agent, with Schering Corp. as manager of the Chemical Sales department, and with Magnus, Mabee and Reynard, Inc.

▸ Richard F. Linsert has recently joined the Golden Peacock Co., Inc., Paris, Tenn., as advertising manager.

▸ James V. Demarest who has been associated with the company since January, 1934, as chief chemist was elected secretary of P. R. Dreyer, Inc., recently. Before he made his present connection he was employed in the organic chemical and essential oils idustry. He received his B.S. and M.S. degrees in chemistry from Rutgers University, and is a member of Phi Beta Kappa and Phi Lambda Upsilon societies.

▸ Julius Weinstein has joined Al Rosenfeld, Inc., New York, N. Y. He was formerly in charge of buying and production for Parfums Charbert, Inc.

▸ Capt. Thomas E. Sheffield, aide to Gen. Arnold, received a telegram while visiting his parents during the Christmas holidays announcing his advancement to the rank of major. Major Sheffield is the son of L. Tracy Sheffield, president of the New England Collapsible Tube Co., New London, Conn.

▸ Edward Russell, who has been in charge of the drug and cosmetic division of the *New York Daily News* for the past decade, left that newspaper January 15 to join the staff of *Liberty Magazine* in a similar capacity. Mr. Russell had been with the *Daily News* for 15 years.

▸ J. Ph. C. Wessing, special traveling representative for Polak & Schwarz, New York, N. Y., who during the last few years worked for the Kenya Government in a reserved occupation, has again taken up his normal full-time duties on behalf of the company.

▸ Virginia Vincent has been appointed Beauty Editor of the Ideal Women's Group, New York, N. Y.

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UNIQUE!
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We are happy to announce to the trade that we are prepared to distribute these two newly created, unusual, highly attractive Glass Stoppered Bottles, as shown here, *in one-half ounce and one ounce sizes!* For full particulars, prices, etc., WRITE US AT ONCE!

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News and events

Elizabeth Arden Appeals Demonstrator Decision

Elizabeth Arden, New York, N. Y., has appealed the recent order which instructed the company to stop using demonstrators. The appeal to the U. S. Circuit Court of Appeals in New York City states that the order is "erroneous, unauthorized and insufficient in law."

Soapless Shampoo Tax Ruling

The Bureau of Internal Revenue has ruled that so-called soapless shampoos are not subject to the 20 per cent tax on toilet articles. As a test Colgate-Palmolive-Peet Company had submitted its products "Halo" and "Palmolive" for an opinion.

Lack of Ration Points Makes Credit Assn. Change Date of Annual Party

Because of the lack of ration points the Drug, Cosmetic and Chemical Credit Men's Association has been compelled to change the date of its annual Winter party to Friday evening, February 2, at the George Washington Hotel, New York, N. Y. A gala affair has been planned and a record attendance is expected. A cocktail party and reception at 6 p. m. will precede the annual banquet.

Colgate-Palmolive-Peet Pays Employee Bonus

The Colgate - Palmolive - Peet Co., Jersey City, N. J. is paying a bonus to employees, other than those who are not on a regular bonus or commission plan, who have been with the company the equivalent of twelve months in the eighteen months preceding December 1, 1944. The bonus amounts to a week's salary. This is the third successive year that former employees, who are now in the armed services, and who before entering service met the required standard, have participated in the bonus.

Bonne Bell Luncheon

On December 6, a luncheon was given at the Hotel Pierre, New York, N. Y., to better acquaint the public with the qualities of Bonne Bell, the new cosmetic line, manufactured in Cleveland, Ohio. The line consists of Nite and Day Make-Up, Ten-O-Six Lotion and Plus 30 Cream. Dr. Marius Malisoff, an authority on hormone creams, spoke on the subject of hormones.

Essential Oil Group Meet

The Essential Oil Association of U.S.A. held its annual meeting January 12, at the Hotel Pennsylvania, New York, N. Y. The business meeting was followed by a dinner.

Tersch Patents and Chemicals Inc. Changes Name to Arrow Laboratories

Tersch Patents and Chemicals, Inc., 152 W. 25th St., New York, N. Y., has changed its name to Arrow Laboratories, Inc. This was done to avoid misspelling and mispronunciation. Ownership and management of the corporation remain unchanged.

Fritzsche Brothers Expand Employee Benefits

Fritzsche Brothers, Inc., New York, N. Y., in augmenting its original plan of Group Life Insurance which was established in 1921, has announced to its employees that they now have disability benefits covering sickness, accident and death, surgical expense and hospitalization, and in addition a plan for old age retirement with pension and death benefit features for surviving beneficiaries.

This Plan, the entire cost of which is borne by the Company, should go a long way in providing employees with a feeling of personal security.

American Home Seeks New Operating Capital

American Home Products Co., New York, N. Y. plans to increase its working capital for post-war activities by offering new stock in the proportion of one to ten shares of common stock.

Tung Oil Order Revoked

The War Food Administration Order No. 39 on tung oil has been revoked. It was suspended on September 18.

Olive Oil Prices

Specific ceilings have been placed on domestic and imported olive oil through MPR 53, Amendment 39. The prices are those which were the average in March, 1942.

THE BENDER CORP.

Manufacturing Chemists Since 1922

Toilet Water • Cologne • Perfume

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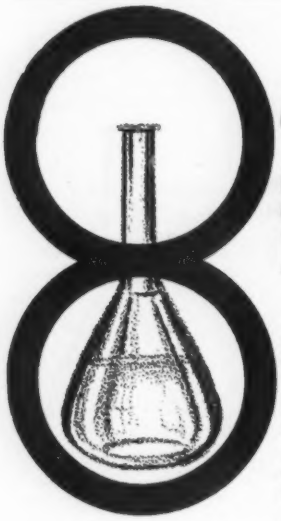

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ZINC STEARATE U. S. P.

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1 Backed by the longest commercial Stearate manufacturing experience in America . . M. W Parsons offer you this new product as the finest Zinc Stearate that can be made.

2 Years of research have made possible a particularly white product

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8. The reputation and record of M. W. Parsons assure you of Uniformity in all shipments.

We also manufacture a superlative grade of PLYMOUTH MAGNESIUM STEARATE

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A complete line of Cosmetic Raw Materials

Henri Robert to Be Consultant for American Manufacturers

The trade will be happy to learn that Henri Robert, noted French perfumer, will remain in New York City to devote his efforts to serve the American perfumery industry in a creative and consulting capacity, as well as a source of new and very special perfumers' raw materials.

Henri Robert

Born and reared in the perfumers' raw material industry, Mr. Robert spent his early years in Grasse, France, working under the direct supervision of his father, Joseph Robert, pioneer in the natural perfume industry. In fact, it was Joseph Robert, with Massignon, who more than fifty years ago created the volatile solvents process for the extraction of perfume from flowers and plants. To this date this process is still employed by all important manufacturers of the valuable absolutes of jasmin, rose, fleur d'orange, etc.

With this background Henri Robert subsequently became associated with some of the larger internationally known Parisian perfumery houses for whom he created many of today's world famous perfumes. In the interest of our industry Mr. Robert's experience and artistic ability to the American perfumery field will be welcomed.

Chesterfield Manufacturing, Inc., Established by J. Leshin

J. Leshin, who was associated with Majestic Metal Specialties, Inc., for many years, has established Chesterfield Manufacturing, Inc., with offices at 565 Fifth Avenue, New York 17, N. Y. The concern will manufacture vanity cases, rouge cases, all types of lipstick holders, power box covers and other metal specialties.

American Soap & Glycerine Producers Meet

The Association of American Soap and Glycerine Producers held their 18th Annual meeting on January 12, at the Waldorf-Astoria Hotel, New York, N. Y.

Federal Trade Commission Objects to Word "Free"

The Federal Trade Commission has again expressed itself on the use of the word "free" in offers by manufacturers. It objects to the use of the word unless the merchandise is delivered without cost, and as a gift. This applies regardless of whether the merchandise is intended to go to the consuming public, to wholesaler, or to retailer.

Sperm Oil Restrictions Removed

War Food Order No. 37, as it was amended, has now been terminated.

Abraham Altman Organizes Admiral Cosmetics, Inc.

Abraham Altman, who has been identified with the trade for over a quarter of a century has gone into business for himself as a manufacturer of perfumes, colognes and cosmetics. Shortly after New Year's day he organized Admiral Cosmetics, Inc., with offices at 116 Broad Street, New York, N. Y.

ISOPROPYL ALCOHOL

available for

SHAMPOOS: Isopropyl Alcohol aids in cleaning hair and scalp thoroughly and in leaving hair soft and lustrous.

HAIR AND SCALP PREPARATIONS: Isopropyl Alcohol as a vehicle for hair and scalp preparations aids the cleansing and antiseptic value of the tonics.

STERILIZING SOLUTIONS: 40% Isopropyl Alcohol will kill dried Bacillus Coli in 1/4 minute. 50% Isopropyl Alcohol is equivalent to 70% ethyl alcohol for killing Bacillus streptococcus and staphlococcus.

BODY RUBS: Isopropyl Alcohol evaporates slowly, thereby prolonging the cooling effect when used in body rubs. Isopropyl Alcohol has no denaturants.

FACE AND HAND LOTIONS: Isopropyl Alcohol evaporates slowly; has little tendency to dry the skin, and aids in keeping the skin soft.

AFTER SHAVE LOTION: Isopropyl Alcohol is excellent for this product because it aids the after-cooling and skin-freshening qualities of the lotion.

Use 91% Isopropyl Alcohol and Release War Materials

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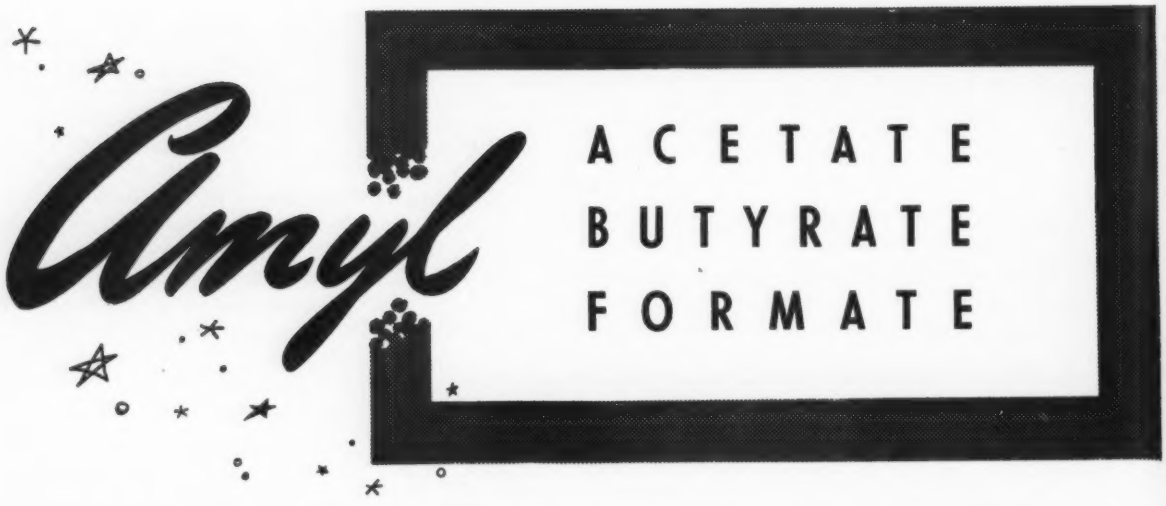

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Givaudan-Delawanna Sales Convention

Under the direction of R. M. Stevenson, sales manager, branch managers and salesmen of Givaudan-Delawanna, Inc., from the various branches and sales offices throughout the country gathered at the offices of the company, 330 West 42nd St., New York, N. Y., for the Annual Sales Convention, December 11, 12 and 13.

How best to serve their customers under the present difficult situation due to shortages of both raw materials and labor was an important topic of discussion. A large part of the company's output is now being utilized for the production of materials directly necessary to the war.

The salesmen carried back to their trade the message that if buyers will cooperate by giving more time for the execution of their orders, better service can be provided.

Post-war plans and problems were briefly touched upon in recognition that the first job is to help win the war. A visit to the factory at Delawanna, N. J., and a dinner at the Essex House closed the convention.

Givaudan executives attend the annual sales banquet: Francis N. Bangs, Dudley F. Lum, Harold F. Duffy, Dr. Eric C. Kunz, Ralph M. Stevenson, Dr. Max Luthy, George Warren.

Sperm Oil Now Unrestricted

Restrictions on sperm oil, which was controlled through War Food Order No. 37, have been lifted. This became effective December 1.

Penick Experimental Farm

S. B. Penick & Co., New York, N. Y., has set up an experimental farm for the cultivation of botanical plants and the extraction of their active ingredients. It is planned to use this farm as a proving ground for the growing of botanical plants in other parts of the United States.

DCAT Section Elects Officers

The Drug, Chemical and Allied Trades Section of the New York Board of Trade elected officers on December 13 for the following fiscal year.

The results of the election were as follows: Chairman, Guy L. Marsters; vice-chairman, Harold M. Altshul; treasurer, Robert B. Magnus; acting secretary, Miss Helen L. Booth (re-elected); Carl M. Anderson was re-elected counsel.

The retiring chairman, E. T. T. Williams, automatically becomes a member of the Section's Advisory Counsel which consists of the ex-chairmen for the past five years.

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The Success of

KELTON LIPSTICKS

is not due to chance. As pioneers in the field, we have steadily specialized in scientifically prepared lipsticks, painstakingly tested in our laboratories. Only the best pass muster.

No assembly line methods are tolerated. Kelton Lipsticks are always made to individual specifications. Your formula is exclusively yours, its secret jealously guarded.

A line on your letterhead brings convincing samples without sales talk.

Now equipped for Quantity production of Quality Cosmetics.

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Lipsticks • Rouges • Eyeshadow • Bath Powder • Face Powder • Mascara, etc.

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**A UNIFORM VISCOUS COLLOIDAL MATERIAL.
FORMS A HOMOGENOUS FLEXIBLE FILM**

**For use in Industrial Hand Protective Creams
. . . also in Hand Lotions**

Available for Prompt Shipment

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ISCO **ABSORPTION BASES**
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Bases of Pre-War quality will be available in 1945

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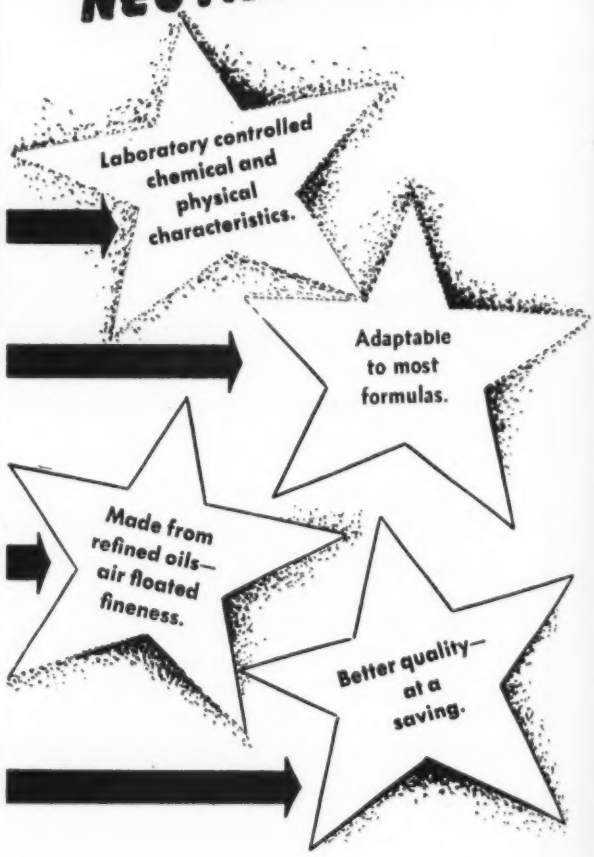
Laboratory controlled chemical and physical characteristics.
Adaptable to most formulas.
Made from refined oils— air floated fineness.
Better quality— at a saving.

POWDERED NEUTRAL SOAP

JOHN POWELL & CO.
112 East 32nd Street,
New York City.

Meeting of TGA Executive Board

A meeting of the executive committee of the Toilet Goods Association was held on December 7. Reports were made by Mr. Brooks, Mr. Mock, Mr. Goulden and Mr. Jaffin.

Drug and Essential Oils Growers Meet in California

A meeting was held in Los Angeles, Calif., December 5 and 6, on the cultivation of drug and associated economic plants in California, under the auspices of the California State Department of Education and the California Polytechnic of San Louis Obispo.

Dr. Albert Verley Held Guilty of Contempt of Court by Federal Judge

Dr. Albert Verley, 79, internationally known chemist, was adjudged to be in civil contempt of court by Judge John P. Barnes of the U. S. District Court for the Northern District of Illinois, last December 4 for his wilful and deliberate violations of the terms of the Consent Decree entered into with Albert Verley & Co. February 12, 1943. This decree enjoined Dr. Verley from using his name in connection with the manufacture of perfumes or cosmetics and was issued with Dr. Verley's consent after he had been paid $37,000 by Albert Verley & Co., Chicago, Ill., to relinquish all rights to his name in the perfume and cosmetic business. Dr. Verley may use his name in England and in continental Europe only in accordance with the terms of the consent decree.

The findings of fact disclosed that Dr. Albert Verley had deliberately engaged in a competing business with Albert Verley & Co. and accordingly the latter concern was awarded compensation covering expenses and counsel fees in prosecuting the proceeding and also profits made by Albert Verley through violation of the consent decree.

Procter & Gamble Offer New Cream

Procter & Gamble, Cincinnati, Ohio, have introduced a new cream "Velvet Skin Lotion Cream."

Special Toiletries Corporation Moves Plant to Irvington, N. J.

Jay H. Schmidt, president and founder of Special Toiletries Corp., announces that the company has purchased the building at 605 South 21st St., Irvington, N. J., into which it moved its plant from New York on January 2.

The new plant covers 75,000 sq. ft. of floor space, or about five times the capacity of the old plant. The property is served by a railroad siding and there are also truck loading platforms to facilitate prompt deliveries.

The company will maintain a New York office at 369 Lexington Avenue. A housewarming at the new plant is planned for about February 1.

van Ameringen-Haebler Host to The Trade at Annual Reception

Prominent members of the essential oil industry, the cosmetic, soap and flavor industries and others interested in aromatic chemicals were guests of van Ameringen-Haebler Inc., New York, N. Y., on the evening of December 14.

STAND BY FOR ACTION IN 1945!

No efforts have or will be spared to obtain again directly from **FRANCE** the finest quality essences we wish our faithful customers and friends to have.

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Hibiscone

A New Medium for Fixing, Blending and Stabilizing Perfume

HIBISCONE is of equal interest to the perfumer, the cosmetic technician, and the toilet soapmaker, to all of whom the completeness, stability, and the lasting property of perfume is of prime importance. Its breadth of applicability and other advantages place it in a class by itself.

HIBISCONE, although belonging to the Musk family, is not a Nitro Musk. Its odor recalls that of natural Musk and Ambrette Seed. Its addition to existing formulas permits of a reduction in the percentage of Musk now used. In new formulations, Musk can be dispensed with entirely by using Hibiscone in conjunction with either natural or synthetic Civet.

HIBISCONE may either be added to finished perfume and toilet water or incorporated in the perfume oil.

HIBISCONE is very stable to alkalis and acids. This makes it applicable to perfume for alkaline as well as acid cosmetics. It does not cause discoloration.

HIBISCONE blends in speedily with the oils in which it is incorporated, results being manifest in about a week or ten days.

HIBISCONE will be found very effective for deodorizing alcohol, and particularly for modifying the odor of isopropyl alcohol.

HIBISCONE S is a valuable, yet inexpensive, medium for stabilizing perfume in toilet soap, without discoloration. It will also neutralize the basically fatty odor of soap stock, thus permitting of a reduction in the percentage of perfume oil ordinarily used.

HIBISCONE S can also be used to advantage in sachet, dusting powder, bubble bath, shampoo, liquid soap, lipstick, etc.

HIBISCONE and **HIBISCONE S** are reasonably priced and can therefore be used even in low-priced products.

Samples of Hibiscone and Hibiscone S, together with suggestions for using these products, will gladly be sent upon request.

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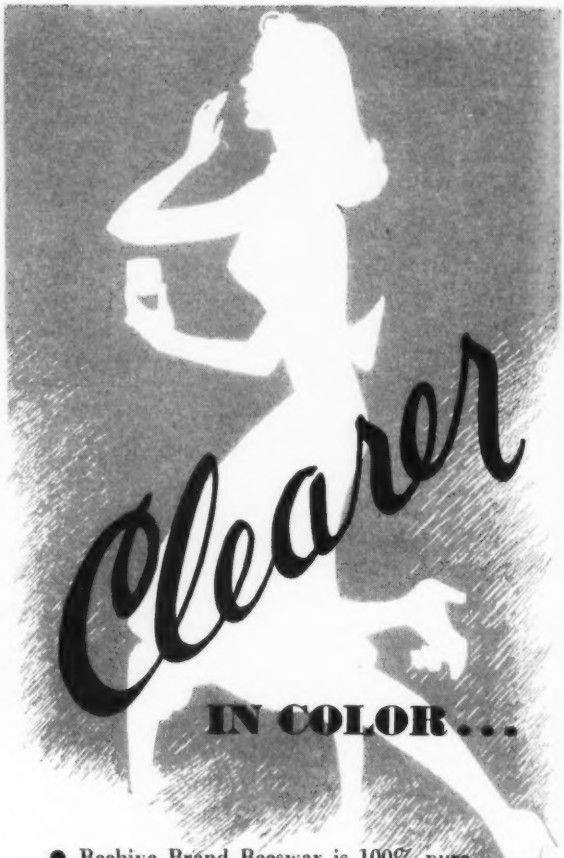

● Beehive Brand Beeswax is 100% pure . . . uniform in texture, and white in color. Selected from the finest grades of crude beeswax, it is carefully tested for purity and uniformity before it is accepted and refined. After thorough processing and clarifying, it is sun-bleached to a high degree of whiteness.

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Established 1855
Buckley Road, Syracuse, New York
SPERMACETI CERESINE RED OIL YELLOW BEESWAX
COMPOSITION WAXES STEARIC ACID HYDISTEAR

Sperti Opens Canadian Branch

Sperti has announced the incorporation of Sperti of Canada, Ltd., with headquarters and manufacturing facilities at Toronto, Canada. The Canadian subsidiary is the first to be established under the expansion program for licensing foreign interests to manufacture and distribute a variety of products patented under the Sperti name.

Sperti of Canada, Ltd., will promote export business in the United Kingdom as a joint project with the parent U. S. affiliate.

Besides the manufacture of burn ointment, the new corporation will produce and market other biodyne products, and eventually irradiated yeast foods, animal feeds, and electronic equipment.

Marinello Introduces New Make-Up Shades

Marinello, New York, N. Y., has introduced a new line of cosmetics. Tests, carried out over a period of ten months, with the cooperation of 500 girls, were responsible for the selection of the final shades. Experimentation was on living faces, under varying lighting conditions. Tests inspected were forthright, as for example, lipstick before and after eating, the pinching of cheeks and forearms for matching natural coloring.

The line, which consists of seven shades of powder, six shades of lipstick and six shades of rouge, is packaged in the new Marinello container, topped off with an identifying pink satin bow.

National Retail Dry Goods Assn. Convention

The National Retail Dry Goods Assn. held its 34th annual conference at the Hotel Pennsylvania, New York. N. Y., on January 8-12.

Ethyl Acetate and Isopropyl Acetate Reclassified

Ethyl acetate and isopropyl acetate have been placed under General Allocation Order M-300. Order M-327 which formerly covered them has been revoked. The allocation period is the calendar month. The small order exemption for ethyl acetate is 1200 pounds, and for isopropyl acetate is 780 pounds.

Mine Safety Appliance Co. enters Cosmetic Business

Mine Safety Appliances Co., Braddock and Mead Streets, Pittsburgh 8, Pa., has added Fend-U lotion to its line. The lotion is designed to protect a worker's skin against all types of cutting oils, cooling compounds and various solvents and to guard against dermatitis from magnesium and zinc dust. It is also claimed to minimize nervous "perspiration" when this is the cause of skin irritation.

McKesson & Robbins Buys Brannon & Carson Co.

McKesson & Robbins, Bridgeport, Conn., has announced the purchase of the 85-year-old firm of Brannon & Carson Co., Columbus, Ga. It will be operated as the Brannon & Carson Division, and H. E. Weathers, for thirty years president of the firm, will be retained as a consultant in the new affiliation.

The new division becomes the 66th wholesale drug unit in the McKesson & Robbins organization, which covers mainland United States and the Hawaiian Islands.

BRIDGEPORT...

For the past two years our facilities have been devoted almost exclusively to the production of war materials. We have been fortunate, in that we have been able to handle this work on the same equipment used for our regular peace time products, and, consequently, when material again becomes available for lipstick containers, vanity cases and other metal cosmetic items we will be prepared to start producing our regular line immediately. If you too are planning your post war program, we will be glad to assist you.

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With the liberation of France and the expected early resumption of her industries, we hope that in the not distant future we may again be in position to offer their fine natural flower oils.

Meantime, we continue to render expert service in helping to solve current problems.

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AROMATIC CHEMICALS
. . . and ESSENTIAL OILS

TOMBAREL
Products Corporation
L. J. Zollinger, President
12 East 22nd St. New York 10

Revlon Holds Sales Meeting

Revlon retail and beauty sales representatives were gathered in New York City the week of December 11th to attend a sales meeting held in the Sherry Netherland Hotel. Charles Revson, president, opened the meeting with an address on "What Will Make Revlon Better in 1945." Al Katx, general sales manager, presided at all meetings.

Course in Marketing Drugs and Cosmetics to Be Repeated at N. Y. U.

Because of the success which followed the inauguration of the first course on the marketing of drugs and cosmetics in any American institution of higher learning, the practical course given since last September at the School of Commerce, Accounts and Finance of New York University by Prof. Louis Bader and Sidney Picker will be repeated during the February to June semester on Monday evenings from 8 to 10 p.m. Throughout the first semester there were also several special speakers such as W. R. M. Wharton, chief Eastern District Food and Drug Administration; Thomas Delehanty, chief Pharmaceutical and Drug Unit, U. S. Dept. of Commerce and Elliot Odell of the Fawcett Publications. Fifty students were enrolled during the first semester. Further details about this course as well as others offered by the college in the evening may be had by writing to the Registrar of the University, Washington Square, New York, N. Y.

Edward Remus Forms New Company

Edward Remus, who has been associated with Standard Synthetics, Inc., as president, has resigned to form Edward Remus & Co. The new company, to deal in essential oils and aromatic chemicals, is located at 11 West 42 St., New York, N. Y.

Toilet Goods Assn. Changes Meeting Date

The date for the annual meeeting of the Toilet Goods Assn., which was to be May 9 to 11, has been changed to May 16 to 18. The location of the meeting remains the Waldorf-Astoria hotel, New York, N. Y.

Edward Ermold Co. Appoints Edgar Hubert New England Sales Manager

Herbert C. Sheldon, president of the Edward Ermold Co., New York, N. Y., makers of multiple automatic and semi-automatic labeling machines, announces the appointment of Edgar Hubert as New England sales manager with offices in the Statler building.

Orbis Products Appoint Mexican Representative

Orbis Products Corp., New York, N. Y., has just announced the appointment of Agencia Continental de Commercio A. en P. as their exclusive Mexican representative. Their address is Jose Maria Iglesias 35, Apartado Postal 8919, Mexico, D. F.

Lanolin Alloted

The present severe shortage of lanolin will be eased somewhat by a release of one hundred fifty thousand pounds for use in the cosmetic industry during the months of January and February. This release was announced January 9.

YOU CAN DEPEND NOW AS ALWAYS ON SHERWOOD'S
CONSISTENTLY HIGH QUALITY AND PERSONALIZED ATTENTION

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Aromatics Division, General Drug, Moves Office

Aromatics Division, General Drug Co., announce that they have moved their offices to 125 Barclay St., New York 7, N. Y., the World-Telegram Building, in order to improve their facilities for better service to their customers.

Their warehouse and laboratories will remain at 644 Pacific St., Brooklyn, N. Y., where they have been for so many years.

Expanding business has made this move necessary. It is also a step in the preparation for post war plans.

Heminway Corporation New Name For Old Waterbury Paper Box Co.

The name of the Waterbury Paper Box Co., Waterbury, Conn., was changed to the Heminway Corporation January 1. For 75 years the Waterbury Paper Box Co. has been manufacturing set-up paper boxes. When the war put metal on the critical list the company directed part of its efforts to the development of paper substitutes for metal such as threaded closures, molded products and canisters and it will continue the manufacture of these products after the war. As a result of this diversification of its line the company has set up the following manufacturing divisions: Set-up Paper Box, Paper Canister, Molded Products and Printing.

Because of the variety of products now made the former name seemed no longer appropriate and hence it was changed. The change in name in no way affects the organization. Harry H. Heminway is president.

Consumer Supply Outlook

Elmer B. Tysdal called a meeting of the Cosmetic Industrial Advisory Committee for January 16. The meeting was for the purpose of discussing the current supply outlook.

Plans All Set for Annual Winter Dinner of BIMS of New York

Plans have been completed for the big annual dinner and get together of the BIMS of New York at the Hotel Lafayette, New York, N. Y., on the evening of January 25. Martin F. Schultes, chairman, is in charge of arrangements.

George Lueders & Co., Inc., Not For Sale

In view of certain rumors which have been circulated in the trade, F. J. Lueders, president of George Lueders & Co. Inc., New York, N. Y., authorizes the statement that the company is most emphatically not for sale and there is no prospect that any proposals of that nature will be entertained.

Oldest Cosmetic Association—The Foragers—Holds 48th Annual Banquet

The Foragers of America, founded in 1898, the oldest association in the cosmetic industry gathered at the Midston House, New York, N. Y., on the evening of January 5 to hold the 48th annual banquet. Stanley Parks was toastmaster and President Walter Conklin made the principal speech. The affair was arranged by a committee composed of Edward Russell, chairman, Stanley Park, Walter Rochelle and John Fenlon.

Pine Oil Reclassified

Pine oil has been placed under General Allocation Order M-300. It was formerly under M-365.

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Essential Oils Specialties

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creator of distinctive perfumes for the trade

CYCLONOL

CHARACTERISTIC ODOR *and* COOLING EFFECT OF MENTHOL

Cyclonol is chemically 1-methyl-3-dimethyl-cyclohexanol-(5). Graphically the structural formula is given in Fig. 1. It may be considered a lower homologue of symmetric or meta Menthol which has the structural formula shown in Fig. 2.

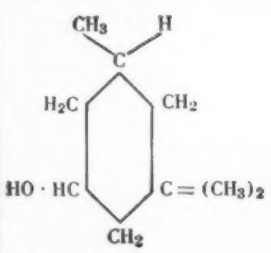

FIG. 1

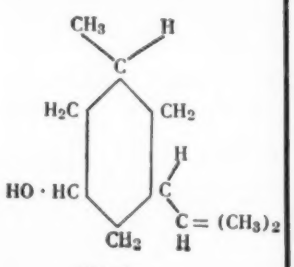

FIG. 2

Cyclonol replaces Menthol satisfactorily in shaving creams and lotions, liniments, analgesic balms, ointments and similar preparations. It has also been accepted by the U. S. Treasury Department as a Denaturant for alcohol in place of Menthol U.S.P.

W. J. BUSH & CO., INC.

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OTTO ROSE

A duplication which accurately captures the full Rose character. Same strength as the NATURAL OTTO ROSE at one-sixteenth the price. Give it the same tests as the NATURAL OTTO ROSE and note the similarity.

SAMPLES and PRICES ON REQUEST

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Geo. Schmitt & Co. Celebrate Anniversary

Geo. Schmitt & Co., lithographers of Brooklyn, N. Y., specializing in perfume and cosmetic labels and packages, celebrated the 70th anniversary of the founding of the firm at a luncheon, December 22.

Watches were presented to five employees; one for the completion of fifty years service with the firm, and four others for completing twenty-five years of service.

William H. Gunther, owner-manager of Geo. Schmitt & Co., received a gift from the employees in appreciation of these twenty-nine years of successful management of the business.

Dominion Food Products Changes Name

Dominion Food Products, Inc., New York, N. Y. announces a change in its corporate name to Dominion Products, Inc.

This is in line with a policy of expansion, under which the company will engage in the manufacture of chemical specialties for the flavor, food, aromatic and special chemicals field. The ownership, management and personnel remain the same as heretofore.

Penick Employees to Receive War Bonds

The Treasury Department has notified S. B. Penick, New York, N. Y., producers and manufacturers of botanical drugs and basic chemicals, of its approval of application to permit presentation of varying amounts of War Savings Bonds to more than sixty-five of the company's employees who have been in its service from ten to twenty-five years. The distribution marks the firm's thirtieth anniversary.

Matchabelli Sponsored Orchestra Plays for Executives

The Stradivari Orchestra under the baton of Paul Lavalle was selected to supply music for the Christmas party of the Radio Executives Club of New York at the Roosevelt Hotel, December 20.

The orchestra is sponsored by Prince Matchabelli, Inc.

Cellophane Restrictions

Through Limitation Order L-20 cellophane, either moisture proof or non-moisture proof, may not be used for wrapping cosmetics, soap, deodorants and cleaning compounds. Waste material cellophane is exempt.

Obituary

William T. Hankey

William T. Hankey died recently in Cleveland, Ohio, at the age of seventy-five. He was vice-president of the Cleveland Fruit Juice Co.

Edward H. Holland

Edward H. Holland was seventy-six years old when he died recently in Jersey City, N. J. He had been associated with Solon Palmer for sixty-one years. During the past forty years he had acted as credit manager.

Simon de Kadt

Simon de Kadt, who had retired as a soap manufacturer, died in Los Angeles, Calif.; age eighty-one.

BENJ. FRENCH, INC.

ESSENTIAL OILS AROMATIC CHEMICALS

ORIGINAL PERFUME BASES

FLORANTHUS

Novelty base giving a sweet, flowery lift to compositions, at the same time is very lasting. Excellent base for modern odors; does not discolor.

Price: $16.00 per pound

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Write for Literature and Samples
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HIGHEST STANDARD

Colors and Dyes for Cosmetics, such as

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- ABSOLUTELY PURE
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MARKET REPORT

TRADE in essential oils, aromatic chemicals and various other raw materials turned quieter over the past month because of seasonal influences, but markets generally proved unusually interesting in the light of military events abroad and generally reduced stocks here.

The United States Department of State has a representative in France for the purpose of surveying the perfume and raw materials situation, and various opinions have been expressed regarding the possibilities of obtaining various floral oils and other articles necessary to perfumers and proprietary manufacturers in this country.

RAW MATERIALS FROM FRANCE

Opinions expressed in local trade circles indicate that it may be a long while before France will be in a position to supply various raw materials to this country. The greatest handicap, it is believed, will be labor, and undoubtedly transportation facilities will be used for more essential articles for some time to come. France will likewise need considerable quantities of oils and chemicals to restore her former position in perfumes in world trade.

Total stocks of glycerine were estimated at 90,000,000 pounds at the close of the year which is equivalent to a six months' supply. Based on government purchases over the past year, and possible future demands, the overall picture could easily change. Another lend-lease inquiry appeared in the market for 1,400,000 pounds of dynamite. The inquiry called for 800,000 pounds for delivery along the Atlantic coast and 600,000 pounds for the Pacific coast. Another interesting feature in the market is the fact that crude glycerine of reasonably good quality is finding an immediate outlet.

MANPOWER SHORTAGE INCREASES

Shortage of manpower which has had a decided influence upon the manufacture of various aromatic chemicals threatens to become more serious in the months ahead because of recent military reverses suffered in the European area. Some houses were forced to cancel prices on an additional number of aromatics over the past month, and indications are that shortages will become more severe before any relief in the tight position can be expected.

GREATER USE OF LINALOE

Increased demand and depleted stocks brought about higher prices for oil linaloe. Shortage of bois de rose oil is reported to have encouraged a greater use of linaloe. Some of the Spanish oils, namely spike lavender, and rosemary, displayed an easier tone. Clove oil continued in an exceedingly tight position on spot but some houses have been offering goods for late January arrival at about 20 cents below the current spot market, subject to safe arrival of the spice.

With about 90 tons of Bourbon vanilla beans that recently arrived here having been disposed of, and local houses reporting a brisk inquiry for additional lots, there is a general feeling in the trade that consumption of vanilla has been on the increase in recent months. An additional cargo is expected to come into the market within a relatively short time. The cargo will amount to about 120 tons. Latest estimates place the new crop of Mexican vanilla beans at 125,000 pounds as compared with 400,000 pounds last year. Virtually all green beans have been sold to curers at prices higher than what local dealers are permitted to sell under OPA ceilings. While Tahiti beans have been arriving here regularly, the quantities received have not proved sufficient to have the slightest influence upon the spot market. Because of the shortage of spot goods, and the uncertainty regarding replacements, local houses are reluctant to accept orders for forward delivery. Under the circumstances, it is extremely difficult for sellers to guarantee delivery.

While no exports of gum arabic have been noted from Port Sudan since late July, approximately 1,300 tons were about to be added to stocks here during the closing days of last year. In some quarters it was stated that the new lots would appear on a poorly supplied market, but other trade factors explained that because of a narrow demand, there is a considerable quantity of gum available especially in outside hands. Advices from the Sudan indicated that new crop goods were beginning to arrive from the interior, and it is expected that additional large arrivals will be noted in the months ahead.

MENTHOL PRODUCTION

Sharp price movements were recorded in Brazilian menthol over the past month, After declining to $12.50 per pound the market recovered slightly and at the close sellers did not appear willing to sell goods below $13. With fairly large stocks available in this market, and another mint crop about ready for new menthol production in Brazil, there does not appear to be any indication of higher prices in the future.

Large consumers of menthol have long since covered their requirements and smaller users have been withholding from the market in hope that they may obtain goods at much lower prices. Based on reports approximately 150 tons were imported into the United States from the last mint crop in Brazil, and this year, while the new crop is several weeks behind schedule because of unfavorable weather conditions during the growing period, it is expected new production will run approximately 250 tons or better.

Unless local houses are able to dispose of their present holdings before new production appears on the market highly competitive conditions are likely to be witnessed. Early offers reaching here from Brazil range between $26 to $28 per kilo whereas this time last year shipping prices were around $33 to $35 per kilo.

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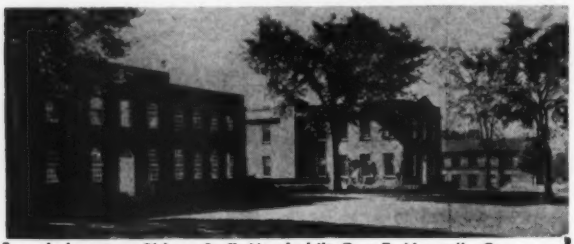

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F. P. A.	4.75@	5.10
Sweet True	1.50@	1.75
Apricot Kernel	.56	Nom'l
Amber, rectified	2.25	Nom'l
Angelica Root	125.00@	150.00
Anise, U. S. P.	4.00	Nom'l
Imitation	1.75@	2.10
Aspic (spike) Span.	3.00@	3.25
Avocado	1.05@	1.25
Bay	1.45@	1.70
Bergamot	6.25@	7.00
Artificial	4.00@	9.25
Birch, sweet	3.00@	5.00
Birchtar, crude	2.25	Nom'l
Birchtar, rectified	4.25	Nom'l
Bois de Rose	5.50@	5.75
Cade, U. S. P.	1.00@	1.25
Cajeput	2.35@	3.00
Calamus	22.50@	35.00
Camphor "white," dom.	.35@	.45
Cananga, native	12.00@	13.00
Rectified	14.00@	16.25
Caraway	18.00@	20.00
Cardamon	24.00@	30.00
Cassia, rectified, U. S. P.	12.00	Nom'l
Imitation	3.75@	
Cedar leaf	1.35@	1.60
U. S. P.	2.65@	3.34
Cedar wood	1.00@	1.10
Celery	20.00@	24.00
Chamomile	150.00	Nom'l
Cinnamon	15.00@	18.75
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Lemongrass	1.50@	1.75
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European	4.00	Nom'l
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Petitgrain	1.65@	2.00
Pimento	6.25@	8.00
Pinus Sylvestris	4.25@	5.00
Pumillonis	4.25	Nom'l
Rose, Bulgaria (oz.)	30.00@	40.00
Synthetic, lb.	45.00@	55.00
Rosemary, Spanish	1.55@	1.75
Sage	4.85@	5.25
Sage, Clary	35.00	Nom'l
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Snake root	12.00	Nom'l
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Thyme, red	2.60@	3.25
White	3.25@	5.00
Valarian	40.00	Nom'l
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Wormseed	5.25	Nom'l
Ylang Ylang, Manila	38.00	Nom'l
Bourbon	9.50@	12.00
Bay	2.75@	3.00

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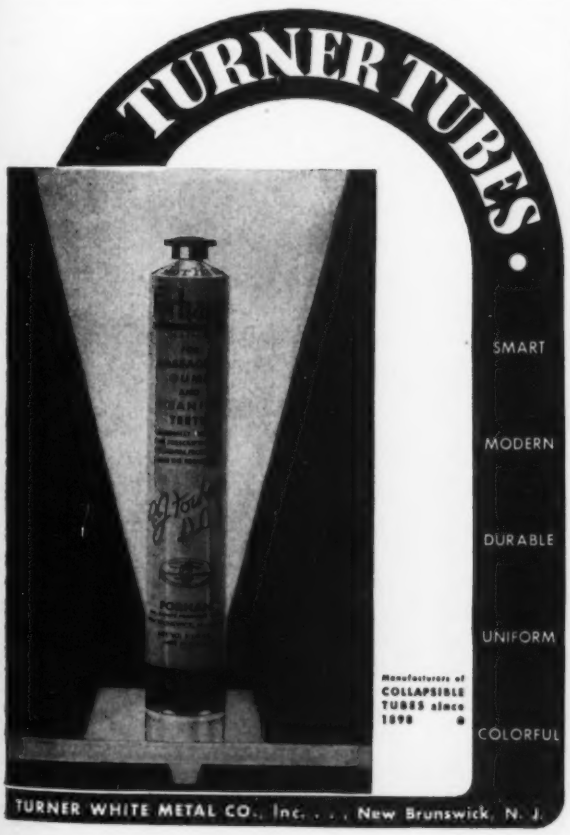

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WANTED: 2—Dry Powder Mixers; 2—Pony Mixers; 2—Tablet Machines; 1—Filter; 3—Kettles; 2—Filling Machines. No dealers. Write Box 2353, The American Perfumer and Essential Oil Review.

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2—Colton #3 Toggle Presses.
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Lavender	28.00	Nom'l
Lemon	40.00@	55.00
Lime, ex.	80.00@	100.00
Distilled	60.00@	67.00
Orange sweet	57.00@	100.00
Peppermint	13.35@	14.00
Petitgrain	3.75@	4.00
Spearmint	5.00@	6.00

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Acetophenone	1.60@	1.75
Alcohol C 8	7.50	Nom'l
C 9	14.00	Nom'l
C 10	7.75@	12.00
C 11	11.50	Nom'l
C 12	7.20@	8.50
Aldehyde C 8	22.50@	28.00
C 9	32.00	Nom'l
C 10	22.00@	29.00
C 11	22.00	Nom'l
C 12	25.00@	30.00
C 14 (so called)	9.25@	9.75
C 16 (so called)	7.65@	8.25
Amyl Acetate	.50@	.75
Amyl Butyrate	.90@	1.10
Amyl Cinnamate	4.50@	5.80
Amyl Cinnamate Aldehyde	2.75@	5.00
Amyl Formate	1.25@	1.75
Amyl Phenyl Acetate	3.75@	4.00
Amyl Salicylate	.80@	.95
Amyl Valerate	2.10@	2.75
Anethol	3.00@	3.50
Anisic Aldehyde	3.15@	4.00
Benzophenone	1.15@	1.30
Benzyl Acetate	.65@	1.00
Benzyl Alcohol	1.85@	2.10
Benzyl Benzoate	1.10	Nom'l
Benzyl Butyrate	2.25@	3.00
Benzyl Cinnamate	5.15	Nom'l
Benzyl Formate	2.75@	3.00
Benzyl-Iso-eugenol	10.25	Nom'l
Benzylidenacetone	2.25@	3.40
Borneol	1.80	Nom'l
Bornyl Acetate	2.00	Nom'l
Bromstyrol	5.00	Nom'l
Butyl Acetate	.11@	14½
Cinnamic Acid	3.75@	4.50
Cinnamic Alcohol	3.85@	4.25
Cinnamic Aldehyde	2.00	Nom'l
Cinnamyl Acetate	10.40@	12.00
Cinnamyl Butyrate	12.00@	14.00
Cinnamyl Formate	10.00@	13.00
Citral, C. P.	3.80@	4.00
Citronellol	6.50@	7.00
Citronellyl Acetate	8.60@	9.20
Coumarin	3.00@	3.50
Cuminic Aldehyde	8.00@	11.25
Diethylphthalate	.24	Nom'l
Dimethyl Anthranilate	4.55@	5.00
Ethyl Acetate	.25	Nom'l
Ethyl Anthranilate	5.50@	7.00
Ethyl Benzoate	.90@	1.15
Ethyl Butyrate	.75@	.90
Ethyl Cinnamate	3.25@	3.75
Ethyl Formate	.80@	1.00
Ethyl Propionate	.80	Nom'l
Ethyl Salicylate	.90@	1.00
Ethyl Vanillin	5.25@	6.00
Eucalyptol	2.65@	2.75
Eugenol	3.00@	3.25
Geraniol, dom.	5.50@	6.00
Geranyl Acetate	4.00	Nom'l
Geranyl Butyrate	8.20@	8.50
Geranyl Formate	9.25@	10.00
Heliotropin, dom.	6.00	Nom'l
Hydrotopic Aldehyde	15.00@	18.00
Hydroxycitronellal	7.75@	10.00
Indol, C. P.	23.00@	26.50
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Iso-butyl Acetate	1.25@	2.00
Iso-butyl Benzoate	1.50@	2.60
Iso-butyl Salicylate	2.70@	3.00
Iso-eugenol	4.00@	4.85
Iso-safrol	3.00	Nom'l
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Linalyl Benzoate	10.50@	
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Methyl Iso-eugenol	5.85@	10.00
Methyl Octine Carbonate	24.00@	30.00
Methyl Paracresol	2.50	Nom'l
Methyl Phenylacetate	3.75@	4.00
Methyl Salicylate	.35@	.38
Musk Ambrette	4.15@	4.35
Ketone	4.20@	4.75
Xylene	1.55@	2.00
Neroline (ethyl ether)	2.00@	3.15
Paracresol Acetate	2.55@	3.00
Paracresol Methyl Ether	2.60	Nom'l
Paracresol Phenyl-acetate	6.50@	8.50
Phenylacetaldehyde 50%	3.00@	3.35
100%	4.50@	5.00
Phenylacetic Acid	3.00@	3.75
Phenylethyl Acetate	2.50@	4.10
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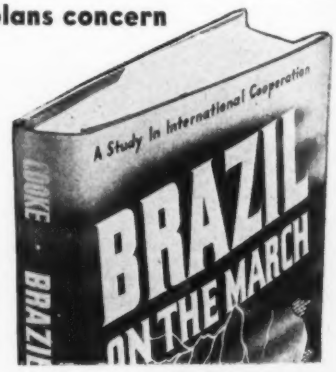

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(guaiacol)	2.35	Nom'l
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Pure	2.25	Nom'l
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Amber	.11½@	.12
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Sumatra	1.40	Nom'l
Gum Galbanum	1.80@	2.00
Gum Myrrh	.50@	.55
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Kaolin	.05@	.07
Labdanum	3.25@	5.00
Lanolin, hydrous	.30@	.34
Anhydrous	.31@	.35
Magnesium, carbonate	.09@	.10¾
Stearate	.24@	.27
Musk, ounce	50.00	Nom'l
Olibanum, tears	.18@	.35
Siftings	.11½@	.13
Orange Flower Water, gal.	1.75@	2.25
Orris Root, African, pwd.	1.10@	1.15
Paraffin	.06¼@	.09
Peroxide	1.10@	1.75
Petrolatum, white	.06¼@	.08½
Quince Seed	1.65@	1.95
Rice Starch	.10	Nom'l
Rose Leaves, red	3.45@	4.00
Rose Water, gal.	6.50@	8.00
Rosin, M. per cwt.	6.77@	
Salicylic Acid	.35@	.40
Saponin	2.00@	2.50
Silicate, 40°, drums, works, 100 pounds	.80@	1.20
Soap, neutral, white	.20@	.25
Sodium Carb. 58% light, 100 pounds	1.35@	2.35
Hydroxide, 76% solid, 100 pounds	2.60@	3.75
Spermaceti	.26@	.27
Stearate Zinc	.30@	.31
Styrax	1.40@	1.60
Tartaric Acid	.64	Nom'l
Tragacanth, No. 1	4.35@	4.80
Triethanolamine	.34½	Nom'l
Violet Flowers	1.75@	2.00
Zinc Oxide, U. S. P. bbls.	.10½	.10¾

OILS AND FATS

Castor No. 1, tanks	.13@	
Cocoanut, Manila Grade, c.i.f., tanks	.0835@	
Corn, crude, Midwest, mill, tanks	.12¾@	
Corn Oil, distilled, drums	.16¼@	.16½
Cotton, crude, Southeast, tanks	.12¾@	
Grease, white	.08⅞@	
Lard	.15 22½@	
Lard Oil, common, No. 1 bbls.	.14@	
Palm, Niger, drums	.0865	
Peanut, blchd., tanks	.1501@	
Red Oil, distilled, tanks	.12½@	
Stearic Acid Triple Pressed	.18⅝@	.18⅞
Double Pressed	.15⅞@	.16⅛
Tallow, acidless, barrels	.14¼@	
Tallow, N. Y. C., extra	.08⅝@	
Whale oil, refined	.1232	Nom'l

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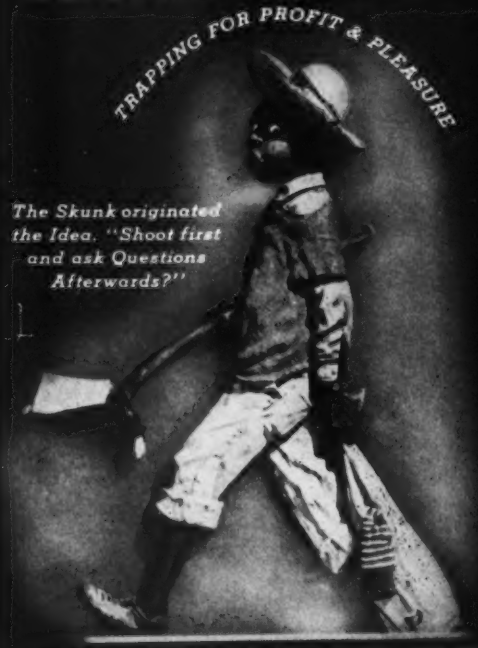

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- Retain their properties at extreme temperatures.
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Production Control and the Analysis of Cosmetics

by MAISON G. DENAVARRE, Ph.C., B.S.

Technical Editor of the American Perfumer & Essential Oil Review; Expert Consultant, Engineer Board, U. S. Army; Special Lecturer in Cosmetics, Wayne University, College of Pharmacy; Consulting Chemist

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CHAPTER IV
(continued)

Physical and Chemical Testing
Gravimetric and Volumetric Methods

C-55—ARSENIC TEST

(U.S.P.)

Reagents satisfactory for use in the arsenic test and in the preparation of the chemical for the test produce either no stain in a blank test or a stain which is scarcely perceptible.

TEST APPARATUS—Prepare several generators as follows: Select a generator bottle of about 50 cc capacity having a mouth about 2.5 cm in diameter, and provide a well-fitting rubber stopper suitably perforated. Through the perforation insert a vertical exit tube about 12 cm in total length and 1 cm in diameter along the entire upper portion (for about 8 cm) and constricted at its lower extremity to a tube of about 4 cm in length and about 5 mm in diameter. The smaller portion of the tube should extend but slightly below the stopper. Place in the tube a pledget of purified cotton, 5 cm in length and extending downward from a point 3 cm below the top of the tube. Moisten the pledgets of cotton in the several generator exit tubes uniformly with a mixture of equal volumes of lead acetate T.S. and distilled water. To remove the excess of lead acetate solution from the cotton and adhering droplets from the walls of the tube apply gentle suction to the constricted end of the tube. In the upper end of this tube, insert through a tightly-fitting, perforated rubber stopper a glass tube 12 cm in length and having an internal diameter of from 2.5 to 3 mm. Place a strip of mercuric bromide test paper in this tube, bending the upper end of the strip so that it will retain its position. This strip should extend to within about 2 cm of the perforated rubber stopper and must not be placed in the tube until the test is to be made. This tube must be thoroughly cleaned and dried each time it is used.

STANDARD ARSENIC TEST SOLUTION—Dissolve 0.1 gm of

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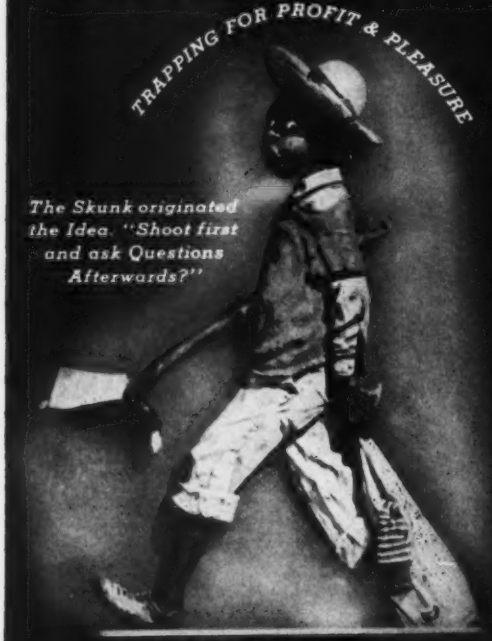

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STANDARD ARSENIC TEST SOLUTION—Dissolve 0.1 gm of

arsenic trioxide which has been finely pulverized, dried over sulfuric acid and accurately weighed, in about 5 cc of a 20 percent solution of sodium hydroxide. Neutralize the solution with diluted sulfuric acid, and add 10 cc more of diluted sulfuric acid and sufficient recently boiled distilled water to bring the volume of the solution to exactly 1000 cc at 25° C. Accurately measure 10 cc of diluted sulfuric acid and sufficient recently boiled distilled water to make exactly 1000 cc of solution at 25° C. Use this solution which contains 0.001 milligram of arsenic trioxide in each cc (at 25° C.) in preparing the standard stain. Keep this solution in a glass-stoppered bottle. It is advisable to make fresh solutions when new standard stains are to be prepared.

PREPARATION OF THE CHEMICAL TO BE TESTED—Add 1 cc of sulfuric acid to 5 cc of an aqueous solution of the chemical substance (1 in 25), unless another quantity is directed in the monograph. This acidulation is not necessary in the case of inorganic acids. Now, unless especially directed otherwise, add 10 cc of sulfurous acid. Evaporate the liquid in a small beaker, on a water bath, until it is free from sulfurous acid and has been reduced to about 2 cc in volume. Dilute this evaporated liquid to 5 cc with distilled water. Substances subjected to special treatments directed in the monographs need not be further prepared for testing.

THE TEST

PREPARATION OF THE STANDARD STAIN—Place in the generator bottle 5 cc of potassium iodide T.S., 2 cc (accurately measured at 25° C) of the standard arsenic T.S., 5 cc of stannous chloride T.S., acid and 28 cc of distilled water. Now add 1.5 gm of granulated reagent zinc (in No. 20 powder), and immediately insert the stopper containing the exit tubes prepared according to the description under Test Apparatus. Keep the generator bottle immersed in water at 25° C during the period of the test. If the reaction is too violent, the stain will not take the form of a distinctive band, and the comparison of color intensity will be difficult. After the test has continued for 1 hour, remove the mercuric bromide test paper and place it in a clean, dry tube for comparison. This stain represents 0.002 milligram of arsenic trioxide. Since light, heat and moisture cause the stain to fade rapidly, comparison should be made as soon as possible. The stained test papers may be preserved by dipping in hot, melted paraffin or by keeping them over phosphorus pentoxide, protected from light.

TESTING THE CHEMICAL—Place in the generator bottle 5 cc of potassium iodide T.S., 5 cc of the solution to be tested for arsenic, and add 5 cc of acid stannous chloride T.S. Set the apparatus aside at room temperature for a period of 10 minutes then add 25 cc of distilled water and 1.5 gm of granulated reagent zinc (in a No. 20 powder), and immediately insert the stopper with exit tubes, as previously described under Preparation of the Standard Stain. Keep the generator bottle immersed in water at 25° C during the period of the test. When the evolution of hydrogen has proceeded actively for 1 hour, remove the mercuric bromide test paper, and carefully compare the stain upon it with the standard stain prepared as previously described. The stain produced by the chemicals tested does not exceed in length or intensity of color that prepared as the standard, indicating not more than 1 part of arsenic trioxide in 100,000 parts of the substances being tested.

INTERFERING CHEMICALS—Antimony, if present in the substance being tested, will produce a gray stain. Sulfites, sulfides, thiosulfates, and other compounds which liberate hydrogen sulfide or sulfurous acid when treated with sulfuric acid, must be oxidized by means of nitric acid and then reduced by means of sulfurous acid as directed under Preparation of the Chemical to be Tested before they are placed into the apparatus. Certain sulfur compounds as well as hydrogen phosphide give a bright yellow band on the test paper. If sulfur compounds are present, a darkening of the absorbent cotton previously moistened with lead acetate T.S., will occur. If such is the case, the operation as directed under Preparation of the Chemical to be Tested must be repeated upon a fresh portion of the solution being tested, and greater care must be used in effecting the complete removal of the sulfurous acid. In testing hypophosphites special care should be observed to oxidize completely the solution being tested as directed, otherwise the evolution of hydrogen phosphide may result in a yellow stain which might be confused with the orange yellow color produced by arsine. The stain produced by hydrogen phosphide is differentiated from that given by arsine by moistening it with ammonia T.S. A stain caused by arsine will become dark when so treated, but a stain produced by hydrogen phosphide will not materially change in color. The test apparatus must be thoroughly cleaned and dried immediately before and after use.

C-56—*ARSENIC IN POWDERS*

(Interim T.G.A. Method No. 13-A)

Arsenic: Remove silica by a treatment similar to that used for lead but use a mixture of H_2SO_4 and HNO_3 about 5 ml of each) and take down to fumes before starting the HF volatilization. After cooling, dilute cautiously with water, make to volume, filter, and use a suitable aliquot of the acid solution for determination of arsenic by the Gutzeit method.

C-57—*ARSENIC IN PETROLEUM PRODUCTS*

(T.G.A. Method No. 3-A)

A 3 to 5-gram sample of the product is decomposed in accordance with the procedure suggested by Lewis and Baldeschwieler (Ind. & Eng. Chem., Anal. Ed., **9**, 405, 1937). The sulfuric acid solution of the arsenic thus obtained is then distilled in the apparatus used by Chaney and Magnuson (Ind. & Eng. Chem., Anal. Ed., **12**, 690, 1940). The arsenic in the distillate is then determined colorimetrically as suggested by the same authors (Ibid, 692).

C-58—*ARSENIC*

Bettendorf Test For

When a solution of arsenic compound is treated with an equal amount of Bettendorf reagent (10 percent stannous chloride in HCl concentrated) a deep caramel-brown color with a brown precipitate is formed.

C-59—*ARSENIC, NOTES ON GUTZEIT TEST*

(R. S. Rosenfels, J. Assoc. Off. Agr. Chem. ***21,*** *493, 1938)*

A 4 percent solution of mercuric bromide in 95 percent alcohol is stable over a six-month period, provided it is filtered just before impregnating the test paper strips. On standing three weeks, the papers were less efficient.

C-60—ARSENIC IN TALC, DETERMINATION OF SMALL AMOUNTS

(S. T. Volkov, Khim. Referat. Zhur. 1, No. 4-5, 178, 1938)

Twenty grams of talc are extracted with 60 cc nitric acid by boiling for 30 minutes. Evaporate to half volume, dilute with hot water and filter. Evaporate filtrate on sand bath with sulfuric acid. Allow SO_2 to be given off for 10 minutes and cool. Add ½ gram hydrazine sulfate and heat again allowing SO_2 fumes to come off for 20 minutes more. Cool, transfer into 200 cc flask and dilute to volume. Transfer 50 cc into a Sanger-Black apparatus, heat to 35° and add 30 drops of 25 percent $SnCl_2$ solution, 2 cc of 25 percent $Fe_2(SO_4)_3$. $(NH_4)_2SO_4$. $24H_2O$ and 3 grams zinc. A strip of mercuric bromide paper absorbs the arsenic.

C-61—ARSENITE

(U.S.P.)

Neutral solutions of arsenites yield with silver nitrate T.S. a yellow precipitate. The precipitate is soluble in either ammonia T.S. or in diluted nitric acid. Neutral solutions of arsenites yield with cupric sulfate T.S. a green precipitate. When boiled with sodium hydroxide T.S. the precipitate becomes red in color. Solutions of arsenous salts which have been acidified with hydrochloric acid yield a yellow precipitate with hydrogen sulfide. The precipitate is insoluble in hydrochloric acid, but soluble in ammonium carbonate T.S.

C-62—ASH-OFFICIAL (A.O.A.C.)

Method I

Heat 5-10 grams of sample in 50-100 ml Pt dish at 100° until H_2O is expelled, add few drops of pure olive oil, and heat slowly over flame until swelling ceases. Place dish in muffle at ca 525° and leave until a white ash is obtained. Moisten ash with H_2O, dry on steam bath and then on hot plate, and re-ash in muffle at 525° to constant weight.

Method II

Carbonize 5-10 grams of sample in 50-100 ml Pt dish at ca 525° and treat charred mass with hot H_2O to dissolve soluble salts. (In case of low-purity products the addition of a few drops of pure olive oil, as in Method I may be desirable.) Filter through ashless filter, ignite filter and residue to white ash, add filtrate of soluble salts, evaporate to dryness, and ignite at 525° to constant weight.

Sulfated Ash

Weigh 5 grams of sample into 50-100 ml Pt dish, add 5 ml of 10 percent H_2SO_4, ignite until sample is well carbonized, and then burn in muffle at 550°. Cool, add 2-3 ml of 10 percent H_2SO_4, evaporate on steam bath, dry on hot plate, and again ignite at 550° to constant weight. Express result as percentage of sulfated ash.

Soluble and Insoluble Ash-Official

Ash the material as directed, Method I or II. Add H_2O to ash in Pt dish, heat nearly to boiling, filter through ashless filter, and wash with hot H_2O until combined filtrate and washings measure 60 ml. Return filter and contents to Pt dish, ignite carefully, cool, and weigh. Calculate percentages of water-soluble and water insoluble ash.

Alkalinity of Soluble Ash-Official

Cool filtrate from above and titrate with 0.1 *N* HCl using methyl orange indicator. Express alkalinity in terms of number of ml of normal acid per 100 grams of sample.

Alkalinity of Insoluble Ash-Official

Add excess of 0.1 *N* HCl (usually 10-15 ml) to ignited insoluble ash in Pt dish, under soluble and insoluble ash, heat to incipient boiling on asbestos plate, cool, and titrate excess of HCl with 0.1 *N* NaOH, using methyl orange indicator. Express alkalinity in terms of number of ml of normal acid per 100 grams of sample.

C-63—ASHING SUBSTANCES THAT SPATTER

(J. Zaparanick, Chem. Anal. 30, No. 2, 48, 1941)

If the substance being ashed manifests a tendency to spatter or boil over, that can be eliminated by adding torn pieces of "ashless" filter paper to the sample in the crucible. Enough is added to soak up the entire sample. Ashing then proceeds without spattering or boiling over. The increase in weight of ash due to the addition of the filter paper is negligible in nearly all cases.

C-64—BALSAM OF PERU

(U.S.P.)

Peruvian Balsam is nearly insoluble in water, but is soluble in alcohol, in chloroform, and in glacial acetic acid, with not more than an opalescence. It is only partly soluble in ether and in petroleum benzin. The specific gravity of Peruvian Balsam is not less than 1.150 and not more than 1.170 at 25° C.

Reaction: Water becomes acid to litmus paper when agitated with Peruvian Balsam.

Fixed Oils: One gm of Peruvian Balsam forms a clear solution when shaken with a solution of 3 gms of chloral hydrate in 2 cc of distilled water.

Rosin: Peruvian Balsam does not show the presence of rosin.

Turpentine: Shake about 1 gm of Peruvian Balsam with 5 cc of purified benzin, and warm the mixture on a water bath for 10 minutes, adding a sufficient quantity of the solvent to replace that lost by evaporation. On evaporating 2 cc of the filtered benzin solution, no odor of oil of turpentine is noticeable.

Acid Value: The acid value is not less than 56 and not more than 84.

Cinnamein Saponification Value: The total volume of half-normal alcoholic potassium hydroxide consumed is equivalent to a saponification value for the cinnamein of not less than 230 and not more than 240.

C-65—BARIUM SULFATE

(U.S.P.)

Identification: (a)—Mix 0.5 gm of barium sulfate with 2 gm each of anhydrous sodium carbonate and anhydrous potassium carbonate, heat the mixture in a crucible until fusion is complete, treat the resulting fused mass with hot distilled water, and filter. The filtrate acidulated with hydrochloric acid, responds to the tests for sulfate.

(b) Dissolve a portion of the well washed residue from test (a) in acetic acid: the solution responds to the tests for barium.

Barium sulfate is a fine, white, odorless, tasteless, bulky

powder, free from grittiness. Barium sulfate is insoluble in water, in organic solvents, and in aqueous solutions of acids and of alkalis.

C-66—BARIUM SULFIDE

The commercial article usually runs between 75 and 95 percent pure. The purer the quality, the lighter the color. Barium sulfide is only slightly soluble in water, forming the sulfhydrate which slowly hydrolyzes.

Assay: To 50 cc of boiling distilled water, add about 1 gram of barium sulfide, accurately weighed, mix and titrate with ammoniacal zinc test solution, using an external alkaline lead indicator. The end point is reached when no black or brown color is obtained by the addition of a drop of the titrated solution to the indicator. Each cc of ammoniacal zinc solution is equivalent to 0.02 gram of barium sulfide.

C-67—BENTONITE

(*U.S.P.*)

To 100 cc of distilled water contained in a glass stoppered cylinder of 100 cc capacity, add 2 grams of bentonite in divided portions, allowing each to settle before adding the next. The mass at the bottom gradually swells until it occupies an apparent volume of not less than 15 cc.

Author's Note: This swelling is reversible; the bentonite may be dried and retested as above. The swelling action is completely destroyed by igniting the bentonite at about 1200° F.

C-68—BEESWAX

Yellow (Bees) Wax

(*U.S.P.*)

The specific gravity of yellow (bees) wax is about 0.9 at 25°. It has a melting point between 62° and 65° C.

Carnauba Wax—Place 0.1 gm of yellow (bees) wax in a test tube and add 20 cc of n-butanol. Immerse the test tube in boiling water, and shake the mixture gently until solution is complete. Immerse the test tube in a beaker of water at 60° C, and allow it to cool to room temperature during a period of 2 hours. A loose mass of fine, needle-like crystals separates from a clear mother liquor. Under the microscope, the crystals should appear as loose needles or stellate clusters, without the presence of amorphous masses the latter indicating the presence of carnauba wax.

Fats or Fatty Acids, Japan Wax, Rosin or Soap—Boil 1 gm of yellow (bees) wax for 30 minutes with 35 cc of an aqueous solution of sodium hydroxide (1 in 7) the volume being preserved by the occasional addition of distilled water, and cool the mixture: the wax separates without rendering the liquid opaque. Filter the cold mixture through glass wool or asbestos, and add to the filtrate an excess of hydrochloric acid: no precipitate observed.

Acid Value—Warm about 3 gm of yellow (bees) wax accurately weighed in a 200 cc flask with 25 cc of neutral dehydrated alcohol until melted, add 1 cc of phenolphthalein T.S., and titrate the warm liquid with half normal alcoholic potassium hydroxide to produce a permanent, faint pink color; the acid value so obtained is not less than 18 and not more than 24.

Ester Value—To the solution resulting from the determination of acid value add 25 cc of half normal alcoholic potassium hydroxide and 50 cc of alcohol, boil the mixture for 4 hours under a reflux condenser, and titrate the excess of the alkali with half normal hydrochloric acid; the ester value so obtained is not less than 72 and not more than 77.

Note: White beeswax has an acid value of 17 to 24, ester value not less than 72 and not more than 79, when determined as under yellow (bees) wax. In other respects both white and yellow beeswax are almost the same.

C-69—BEESWAX ADULTERATION

(*Weinwurm, Analyst* **22**, *242, 1897*)

Paraffin, ceresin, rosin, carnauba and insect wax, from 2.5 percent may be detected by saponifying 5 gm of the beeswax with 25 cc *N*/2 alcoholic alkali. Remove alcohol, add 20 cc glycerin, warm until mass is uniformly dissolved. Add 100 cc boiling distilled water. Pure beeswax gives a clear solution.

C-70—BEESWAX, ASH IN

(*T.G.A. Method No. 10*)

In a platinum dish, previously ignited, cooled in desiccator and weighed, place 5 grams of wax. Heat slowly to about 600° C (1112° F) in a muffle and ash to constant weight (about 15 minutes). Cool in a desiccator and weigh for ash. Calculate as percentage of original weight of wax.

C-71—BEESWAX, DETERMINATION OF PARAFFIN OR CERESIN IN

(*Vizern and Guillot. Chimie & Industrie Special No., 932-4, 1934. Thru C.A.*)

The method recommended consists essentially in determining hydrocarbons, and determining the Iodine number of the hydrocarbons where the content of the latter indicate possibility of adulteration. Ten grams of sample are saponified by refluxing 1 hour with 50 cc of alcoholic KOH (40 grams KOH per liter); the alcohol is evaporated to 25 cc, the residue is mixed with 2 grams $NaHCO_3$ and 50 grams fine sand, evaporated completely, dried at 110-15°, ground fine and percolated with 10 x 25 cc petroleum ether (boiling below 70°) with drying and regrinding after the 5th and 8th percolations; the combined percolates are allowed to stand 1 hour at 15-18°, filtered if necessary, evaporated to dryness in a tared dish, dried and weighed (*E*). If (*E*) is less than 17 percent, this may be taken as proof of the absence of paraffin or ceresin; if it is over 22 percent, paraffin or ceresin is almost certainly present Introduce 1.5 grams of the extract into a special apparatus (a Pyrex-glass acetylating bulb provided with a glass-stoppered opening for introducing the sample and surmounted by a glass condenser graduated at the top, closed at the top with a glass stopper and having glass-stoppered water inlet and outlet for the jacket), add 10 cc Ac_2O, boil briskly for 1 hour with the jacket filled with cold water, fill the jacket with boiling water, reverse the apparatus, read the volume of supernatant hydrocarbons, and multiply by 0.73 to convert to weight. Analysis of 12 samples of widely different origins and known purity gave 14.50-16.10 percent hydrocarbons having Iodine numbers of 18.7-28.1 (method of determination not stated). A maximum of 17 percent hydrocarbons and a minimum of 18 for their Iodine number are suggested as criteria for adulteration and would detect with practical certainty the presence of over 3 percent paraffin or ceresin.

C-72—BEILSTEIN TEST

For Halogens

Using a cool halogen-free copper wire spiral, dip into the suspected solution, ignite on the outside of the Bunsen flame, then place into the non-luminous flame. A green color shows the presence of halogen.

C-73—BENZOATES

(*U.S.P.*)

In neutral solutions, benzoates yield a salmon-colored precipitate with ferric chloride T.S. In moderately concentrated aqueous solutions, benzoates yield a precipitate of benzoic acid upon acidulation with diluted sulfuric acid. The precipitate is readily soluble in ether.

C-74—BENZOCAINE

(*U.S.P.*)

Ethyl aminobenzoate (benzocaine) melts between 88° and 90° C.

A: When ethyl aminobenzoate is boiled with an aqueous solution of an alkali hydroxide, alcohol is produced.

B: Dissolve about 20 mg of ethyl aminobenzoate in 10 cc of distilled water with the aid of a few drops of diluted hydrochloric acid and add to the solution 5 drops of an aqueous solution of sodium nitrate (1 in 10), followed by 2 cc of a solution of 0.1 gram of betanaphthol in 5 cc of sodium hydroxide T.S.: an orange red precipitate is formed in the mixture.

C: An aqueous solution of ethyl aminobenzoate (1 in 50), prepared with the aid of a slight excess of diluted hydrochloric acid, yields a precipitate with iodine T.S.

D: To 10 cc of an aqueous solution of ethyl aminobenzoate (1 in 50), prepared with the aid of diluted sulfuric acid, add 3 drops of tenth normal potassium permanganate; the pink color is discharged.

Benzocaine

See also Amino Benzoic Acid, Derivatives of, Determination (C-49).

C-75—BENZOCAINE

Weigh out a quantity representing about 100 milligrams of benzocaine into an Erlenmeyer flask. Extract with hot 5 percent HCl solution using at least five portions of solution, totaling about 150 cc. Chill and filter the combined extract through cotton until it remains clear. Immediately add 50 cc *N*/10 Bromide-Bromate solution and let stand for 5 minutes (do not vary much from this length of time). Add 10 cc 20 percent KI test solution and titrate with *N*/10 sodium thiosulfate using starch solution as indicator. The number of cc *N*/10 bromine solution actually used, times 0.004127 represents the number of grams of benzocaine found.

Note: Samples representing more than 100 mg of benzocaine are very apt to yield low results. Hence aliquot methods are of little value here.

Samples kept in the acid state for more than 6 to 10 hours will yield high results. Samples allowed to react with the bromine solution for more than 5 minutes will also yield high results.

Extraction of the benzocaine is best carried out on a water bath as direct heat has a tendency to darken the filtrate and the results are correspondingly high. The entire assay must be completed on the same day as started.

C-76—BENZOCAINE, DETERMINATION OF

(*L. M. Sol'ts and E. M. Kotik. Ukrain. Gosuderst. Inst. Eksptl. Farm. (Kharkov), Konsul'tatsionnye Materialy* **1940,** *No. 5, 162-4; C.A.* **36,** *3001-2, 1942*)

Dissolve approximately 0.04 gram of benzocaine in 25 ml of water acidified with several drops of HCl, add 25 ml of 0.1 *N* $KBrO_3$, 1 gram of KBr and 5 ml of HCl, let stand in a dark place for 10-15 minutes, add 1 gram of KI and after 5 minutes titrate the Iodine with $Na_2S_2O_3$. One ml of 0.1 *N* $KBrO_3$ corresponds to 0.004127 gram benzocaine. Satisfactory results were obtained. In second method, to 0.1-0.3 gram of benzocaine add 25 ml of 0.1 *N* NaOH, boil with a reflux condenser for 20 minutes over a small flame, wash the condenser with 5 ml of alcohol, cool, add 2-3 drops of phenolphthalein and titrate the excess base with 0.1 *N* HCl. One ml of 0.1 *N* NaOH corresponds to 0.01651 gram of benzocaine. Make a blank test simultaneously. The method produces satisfactory results with pure benzocaine and with mixtures of benzocaine with sugar, urotropine, pyramidone, $Bi(NO_3)_3$, or petrolatum.

C-77—BENZOCAINE IN OIL

(*Clarence Burson and C. W. Sondern, Pharm. Arch.,* **14,** *17, 1943, Thru J. Amer. Pharm. Assn.* **33,** *173, 1944*)

Accurately measure 10 cc of the oil and place in a separatory funnel. Extract with diluted sulfuric acid using 25 cc for the first extraction and 10 cc each for 4 successive extractions. Pass the extracts through a funnel containing a pledget of cotton moistened with diluted sulfuric acid into a second separator. Shake the combined acid extracts once with 5 cc of chloroform to remove any oil and discard. Make the solution alkaline with strong solution of ammonium and add a slight excess. Cool and extract the drug completely with chloroform using at least one 20-cc and three 10-cc portions. Pass the extracts through a small funnel containing a pledget of cotton moistened with chloroform into a tared flask, rinse the funnel with a little chloroform and concentrate the extract on a water bath with the aid of a fan to about 5 cc. Add 5 cc of alcohol (95 percent), evaporate to dryness at about 50° C and finally in a vacuum desiccator overnight. Weigh as benzocaine or titrate with 0.1 *N* bromine solution as described below. In the ointment: Weigh accurately approximately 10 gm of the ointment, transfer to a separator and dilute with 50 cc petrolatum ether. Extract 6 times with diluted sulfuric acid and then proceed as under the determinations below. The benzocaine may be determined by bromination as follows: Dissolve the total dry extract in a sufficient quantity of methanol to make 50 cc and place an aliquot sample equivalent to 0.1-0.15 gm of the extract in a 500-cc iodine flask. Neutralize with sodium hydroxide T.S. and add 50 cc 0.1 *N* bromine solution. Add 10 cc of concentrated hydrochloric acid, quickly insert the stopper and shake. Place 10 cc of freshly prepared 10 percent potassium iodide solution around the stopper and set aside in a dark place for 1 hour at room temperature, loosen the stopper and allow the potassium iodide solution to run into the flask. Shake well, wash the stopper and sides of the flask with distilled water and titrate the liberated iodine with 0.1 *N* sodium thiosulfate, adding 2 cc of starch T.S. near the end point.

C-78—BENZOIC ACID

(*U.S.P.*)

Assay: Dry about 1 gram of benzoic acid in a desiccator over sulfuric acid for 5 hours, and dissolve about 0.5 gram of the dried acid, accurately weighed, in 25 cc of diluted alcohol, which has previously been neutralized with tenth-normal sodium hydroxide, using 3 drops of phenolphthalein T.S. as the indicator. Titrate this solution with tenth-normal sodium hydroxide to a pink color. From the volume of tenth-normal sodium hydroxide consumed, subtract one-fifth of the volume of fiftieth-normal hydrochloric acid used in the test for chlorinated compounds. Each cc of tenth-normal sodium hydroxide is equivalent to 0.01221 gram of $HC_7H_5O_2$. (See also C-2.)

C-79—BENZOIN

(*U.S.P.*)

Heat a few fragments of Benzoin in a test tube: Sumatra Benzoin evolves a sublimate consisting of plates and small, rod-like crystals that strongly polarize light. Siam Benzoin evolves a sublimate directly above the melted mass consisting of numerous long, rod-shaped crystals, which do not strongly polarize light.

Treat about 0.25 gm of Benzoin with 5 cc of ether, decant about 1 cc of the ether solution into a porcelain dish, and add to it 2 or 3 drops of sulfuric acid: the solution of Sumatra Benzoin produces a deep reddish brown coloration of the sulfuric acid and the solution of Siam Benzoin produces a deep purplish red coloration. For assay see page 84, U. S. P. XII.

C-80—BENZYL BENZOATE

(*Melvin W. Green & Nancy Green*
Bull. Natl. Form. Committee **12**, *156, 1944*)

Benzyl benzoate is a clear, colorless, oily liquid having a slight aromatic odor and a sharp, burning taste. It is insoluble in water and in glycerin. It is miscible with alcohol, ether and chloroform. The specific gravity of Benzyl Benzoate is not less than 1.116 and not more than 1.120 at 25° C. The congealing point is not less than 18.7° C when determined by the method for determining the congealing point in the U. S. P. XII, page 566.

Identification (a): To 1 cc of Benzyl Benzoate in a test tube, add 2 cc of potassium permanganate T.S. and warm gently. The odor of benzaldehyde may be detected.

Identification (b): Evaporate the alcohol from the solution obtained in the *assay* and place 5 cc of the solution in each of two test tubes. To the contents of the first tube add diluted hydrochloric acid, if necessary, until the color of the phenolphthalein is discharged and add a few drops of ferric chloride T.S. A salmon colored precipitate is formed. To the contents of the other tube add 2 cc of diluted hydrochloric acid. A white precipitate of benzoic acid which is soluble in ether is formed.

Add 2 drops of phenolphthalein T.S. to 25 cc of alcohol and add tenth-normal sodium hydroxide until a weak pink color is formed. Add 5 cc of Benzyl Benzoate, mix well and titrate with tenth-normal sodium hydroxide. No more than 0.3 cc of tenth-normal sodium hydroxide is required to produce a weak pink color.

Assay: Add 25 cc of half-normal alcoholic potassium hydroxide to an Erlenmeyer flask containing about 2 gm of Benzyl Benzoate, accurately weighed, and heat to incipient boiling for 1 hour under a reflux. Cool and titrate with half-normal hydrochloric acid using phenolphthalein T.S. as the indicator. Each cc of the half-normal potassium hydroxide consumed in the hydrolysis is equivalent to 0.1061 gm of Benzyl Benzoate.

C-81—BETA-NAPHTHOL

(*A.O.A.C.*)

QUALITATIVE TEST-TENTATIVE

Grind the sample and mix thoroughly. Transfer a convenient quantity (50-200 grams according to the consistency of the sample) to 500 ml volumetric flask, add sufficient water to make a volume of about 400 ml, and shake until the mixture becomes uniform. Add 2 to 5 grams of calcium chloride and shake until dissolved; render distinctly alkaline with about 10 percent sodium hydroxide solution, using litmus paper as indicator; fill to mark with water, shake thoroughly, allow to stand for at least 2 hours shaking frequently, and filter.

In a separatory funnel extract 200 ml of the sample or the aqueous extract from above, with 10 ml of chloroform. To the chloroformic extract in a test tube, add a few drops of 0.5 *N* KOH solution and place in boiling water bath for 2 minutes. Presence of beta-naphthol is indicated by formation of deep blue color which changes to green then to yellow.

BETA-NAPHTHOL
Also see Alpha Naphthol
BICARBONATE

For identification test, see Carbonate. For determination, see also Weckesser's Modified Chittick Method.

C-82—BICARBONATE ION IN SOAP PRODUCTS, QUALITATIVE TEST FOR

(*Eugene W. Blank & Lillian E. Utter, Oil & Soap* **21**, *27-28, 1944*)

The test described is based upon the fact that bicarbonates will liberate hypochlorous acid from hypochlorites. In the presence of potassium bromide, bromine will be liberated by the hypochlorous acid and can be extracted by chloroform or carbon tetrachloride. The depth of color obtained gives an approximation of the amount of bicarbonate present.

Reagents: (a) *Hypochlorite Solution.* Dissolve 50 grams of chlorinated lime, U.S.P. XII reagent grade, in 500 ml of water. An appreciable residue will remain. Stir vigorously at intervals and after an hour or longer filter into a 1000-ml volumetric flask. Make to volume with water at room temperature, and mix. This solution keeps well if stored in a cool, dark place.

Instead of the above, 20 to 25 grams of true calcium hypochlorite may be dissolved directly in water in a 1000-ml flask, made up to volume at room temperature, and mixed.

(b) *Potassium Bromide Solution.* Dissolve 75 grams of potassium bromide in 500 ml of water. Filter into a 1000-ml volumetric flask and bring to volume with water at room temperature.

Procedure: The test should be run on alcohol-insoluble material obtained in the usual manner except that the alcohol-insoluble material need only be air dried by drawing air through the filter.

Transfer 25 ml of the hypochlorite and 25 ml of the potassium bromide solution to a 60 ml cylindrical separa-

tory funnel. Add 5 ml of carbon tetrachloride. Add 0.5 to 5 grams of the alcohol-insoluble material (depending upon the amount of $NaHCO_3$ expected to be present) in small quantities at a time.

Stopper the separatory funnel and shake vigorously. Allow the carbon tetrachloride to settle and observe for any brown or pink coloration. View against white paper as a background.

Liberation of bromine with subsequent coloration of the carbon tetrachloride layer indicates the presence of sodium bicarbonate.

If very small amounts of sodium bicarbonate are present, the test should be compared with a blank run in the same manner but omitting addition of the sample.

Sodium carbonate, perborate, pyrophosphate, silicate, trisodium phosphate, do not interfere. Borax and calgon do interfere seriously. Wetting agents and sodium sulfate do not interfere but may emulsify the carbon tetrachloride.

C-83—BISMUTH

(*U.S.P.*)

When dissolved in a slight excess of nitric or hydrochloric acid, bismuth salts yield a white precipitate upon dilution with water. This precipitate is colored brown by hydrogen sulfide and the resulting compound dissolves in a warm mixture of equal parts of nitric acid and water.

BISULFITE

For identification test and determination see Sulfite.

C-84—BORATES

(*U.S.P.*)

Solutions of borates, acidulated with hydrochloric acid, color turmeric paper brownish-red; the color becomes intensified by drying; the color changes to greenish-black by moistening with ammonia T.S. When a borate is treated with sulfuric acid, methyl alcohol added, and the mixture ignited, it burns with a green-bordered flame.

C-85—BORAX

(*U.S.P.*)

Sodium borate contains not less than 52.32 percent and not more than 54.92 percent of $Na_2B_4O_7$, corresponding to not less than 99 percent of $Na_2B_4O_7 \cdot 10H_2O$.

An aqueous solution of sodium borate (1 in 20) responds to the tests for sodium and borate.

Assay: Dissolve about 2 gm of sodium borate, accurately weighed, in 50 cc of distilled water. Titrate with half-normal hydrochloric acid, using methyl red T.S. as the indicator. Each cc of half-normal hydrochloric acid is equivalent to 0.05032 gm of $Na_2B_4O_7$.

C-86—BORIC ACID AND BORATES

(*A.O.A.C.*)

Qualitative Test—Official

Preliminary test: Acidify sample with HCl in proportion of 7 ml of acid to each 100 ml of sample. In case of solid or pasty samples, heat with enough H_2O to make sufficiently fluid before acidifying. Immerse strip of turmeric paper in the acidified liquid, and allow the paper to dry spontaneously. If borax or H_3BO_3 is present, the paper will acquire a characteristic red color, changed by NH_4OH to dark blue-green, but restored by acid.

Confirmatory test: Make about 25 grams of sample decidedly alkaline with lime H_2O or milk of lime and evaporate to dryness on steam bath. Ignite dry residue at low red heat until organic matter is thoroughly charred. Cool, digest with about 15 ml of H_2O, and add HCl dropwise until the solution is distinctly acid. Immerse piece of turmeric paper in solution and allow to dry without heat. In presence of borax or H_3BO_3, the color change will be same as described under "*Preliminary test.*"

C-87—BORIC ACID

(*U.S.P.*)

Assay: Dry about 2 grams of boric acid over sulfuric acid for 5 hours, weigh accurately, and dissolve the dried acid in 100 cc of a mixture of equal volumes of glycerin and distilled water, previously neutralized to phenolphthalein T.S. Titrate with normal sodium hydroxide, using phenolphthalein T. S. as the indicator. Discharge the pink color by the addition of 50 cc of glycerin, neutralized to phenolphthalein T. S., and again titrate until the pink color reappears. Each cc of normal sodium hydroxide is equivalent to 0.06184 gm of H_3BO_3.

C-88—BORAX DETERMINATION

(*A.O.C.S.*)

Weigh 10 grams ($\pm$0.02 gram) of the soap (or 5 grams ($\pm$0.01 gram) if more than 5 percent of borax is present) into a platinum dish and add 2.15 grams of fusion mixture consisting of 200 grams sodium carbonate, 15 grams silica in fine powder. To this mixture add 15 cc of alcohol, mix with the aid of a glass rod and, after washing the rod with a little alcohol, evaporate the mass to dryness on the water bath. Ignite until the combustible material is destroyed, cover the dish with a piece of platinum foil and fuse. Completely disintegrate the fusion by boiling with water and transfer the solution to a 250-cc round-bottom flask. Acidify with 20 cc of dilute hydrochloric acid (1:1), heat nearly to boiling, and add a moderate excess of dry precipitated calcium carbonate. Connect with a reflux condenser and boil vigorously for 10 minutes. Filter out the precipitate through a folded filter, washing several times with hot water, but keeping the total volume of liquid below 100 cc.

Return the filtrate to the flask, add a pinch of calcium carbonate and again boil under a reflux condenser. Remove the flame and connect the top of the condenser with a water pump. Apply the suction until the boiling has nearly ceased. Cool to ordinary temperature, add 50 cc of neutral glycerin and titrate the solution with 0.1 *N* sodium hydroxide, free from carbonate, using phenolphthalein as indicator. After the end-point is reached add 10 cc more of glycerin and again titrate. Repeat this process until the addition of glycerin causes no further action on the end-point. The number of cubic centimeters required multiplied by 0.00955 will give the equivalent of borax ($Na_2B_4O_7 \cdot 10H_2O$) present in the solution.

C-89—BORIC ACID, SENSITIVE REACTION FOR

(*F. P. Zorkine. J. Prikl. Khim.*, **9**, *1505, 1936*)

Boric acid is detected by a 0.05 percent carmine red solution in concentrated sulfuric acid, which changes from red to blue in the presence of boric acid. The sensitivity of the test is 0.0001 mg of boron in 0.03 cc. The test is applicable to natural salt solution and minerals. The reaction is probably due to the formation of an inner-complex ester of boric acid. (*Thru J. Am. Pharm. Assoc.*)

C-90—TWO NEW TESTS FOR BORON

(*J. A. Radley. Analyst* **69**, *47-8, 1944*)

Directions are given for producing a deep-blue color with small quantities of Boron and a solution of Solway Purple (Color Index 1073) in concentrated sulfuric acid and an intense orange-brown fluorescence with a very dilute solution of 1-amino-4-hydroxyanthraquinone in sulfuric acid. In the absence of fluoride 0.1 ml of a solution containing 1 gm borax in 100 liters of water will give the first test and 1 drop of a solution containing 1 gm borax in 10 liters of water will give the second one. (*Thru C. A.* **38**, *1973-4, 1944.*) Note: Oxidizing agents, especially nitrates interfere and should be reduced before proceeding with the test.

C-91—BORIC ACID, A NEW SPECIFIC COLOR TEST FOR

(*F. Michel. Mikrochemie ver. Mikrochim. Acta* **29**, *63-72, 1941. C. A.* **35**, *5412, 1941*)

The various tests for H_3BO_3 were studied critically and as a result of numerous experiments it was found possible to modify the turmeric test so that it is more sensitive and more specific. To a solution containing a little free H_3BO_3 or a borate and HCl, add 1 or 2 drops of 0.1 percent alcoholic solution of curcumin from *Curcuma longa L*, a few drops of pure ethyl alcohol, a little salicylic acid, and a drop of 6 *N* HCl. Stir in a tiny porcelain dish and evaporate on the water bath. If a mere trace of H_3BO_3 is present the residue will be strongly colored reddish. Dissolve the residue in a few drops of ethyl alcohol and again evaporate. This time the spot remaining will usually show a greenish fluorescence. Dissolve again in a few drops of ethyl alcohol and to the reddish solution add a few drops of 6 *N* NH_3 solution. This time a cornflower-blue color will develop. To test an organic substance, heat it with a little soda, treat the ash with a few drops of HCl solution and then carry out the test as above. Sometimes it is well to distill off the H_3BO_3 from the HCl solution before making the test; in this case it is necessary to neutralize the excess HCl with soda. In other cases the distillation as methyl ester is to be recommended. Some 50 other organic acids were tested to see if they were as satisfactory as the salicylic acid in the test; only β-naphthoic acid was as satisfactory.

C-92—BORIC ACID, SENSITIVE TEST FOR

(*A. S. Komarovskii and N. S. Poluektov. Mikrochemie* **14**, *317, 1934. C. A.* **28**, *6391, 1934*)

p-Nitrobenzeneazochromeotropic acid (the so-called "chromotrope 2 B" described by von Kuzel in 1903) can serve for the detection of very small quantities of H_3BO_3. Place a drop of the slightly alkaline solution to be tested in a small porcelain dish. Evaporate to dryness and add to the contents of the still hot dish 2-3 drops of a solution of the dyes in concentrated H_2SO_4. On cooling, a bluish-violet or greenish-blue color results if 0.00008 mg of Boron is present in 0.04 cc of the solution tested. Fluorides and oxidizing substances such as nitrates and chlorates interfere. When the latter are present, heat a drop of the solution to be tested with a little solid hydrazine sulfate, evaporate to dryness and heat until SO_3 fumes are evolved. To the residue add 2-3 drops of the reagent and observe for color. If fluorides are present, treat 1-2 drops of the original solution with a little powdered SiO_2 and 1-2 drops of concentrated hydrofluoric acid. Evaporate till fumes of SO_3 are evolved and all F is volatilized as SiF_4, then add the reagent and allow to cool.

C-93—BROMATE

(*U.S.P.*)

Sulfurous acid added drop by drop to a solution of a bromate produces a yellow color, which disappears upon the addition of an excess of sulfurous acid. Bromates, when ignited gently with charcoal, yield bromides which may be recognized by the characteristic reactions.

C-94—BROMATE, IDENTITY TEST FOR

(*Georges Deniges. Bull. trav. soc. pharm. Bordeaux* **81**, *5-7, 1943; Chem. Zentr. 1943, II, 751-2. Chem. Abs.* **38**, *4880, 1944*)

One drop of a solution containing 0.4 mg bromate will react with a 0.5 percent solution of MnO_4 in 50 percent H_2SO_4 to give the color of MnO_4. A similar test is not obtained with ClO_3 or IO_3 but if Br is also present, Br_2 is formed which must be removed by shaking with $CHCl_3$.

C-95—BROMATE, TEST FOR—KORENMAN

(*Merck Index*)

Add 1 cc of 3 *N* HCl and 1-2 drops 0.015 percent methyl orange solution to 2 cc of the solution being treated. Bromate immediately decolorizes the solution. Sensitiveness 0.014 mgm in 2 cc.

C-96—BROMATE, TEST FOR—HAHN

(*Merck Index*)

Reagent: Dissolve 0.1 gm fluorescein in 5 cc of 0.1 *N* NaOH and dilute to 1000 cc with water.

To 1 cc of the solution to be tested, add 0.1 cc of the reagent and a little solid oxalic acid, heat to boiling, cool, and add 1-3 drops of 0.1 *M* chloramine. Compare the color change with a blank test. The reaction can be obtained with 0.01 mg of potassium bromate in the presence of 0.1 gm potassium chlorate.

C-97—BROMATE, TEST FOR—MONTEQUI-PUNCEL

(*Merck Index*)

To 2-3 cc of a solution of 0.05 gm fuchsin and 50 cc HCl in 200 cc water add a few drops of the suspected solution. The presence of a bromate is indicated by the formation of red-violet color. Sensitiveness 0.002 mgm.

C-98—TEST FOR BROMIDE AND IODIDE IN A MIXTURE

(*R. A. Johnston, J. Chem. Edu.* **21**, *258, 1944*)

The mixture of bromide and iodide is acidified with sulfuric acid (1:20), and 3 percent hydrogen peroxide is added in sufficient quantity to oxidize the iodide ion completely to free iodine. Starch paste is added to 2 or 3 ml of the solution to test for iodide. A quantity of activated charcoal is then added, depending upon the concentration of the iodide. The mixture is stirred well for 2 to 3 minutes and then allowed to stand 2 or 3 minutes, thus allowing time for the redox reaction and the subsequent adsorption of free iodine to take place. The mixture is then filtered, 2 to 3 ml of the filtrate are treated with more hydrogen peroxide, and starch paste is added as a test for complete oxidation of iodide to free iodine. A positive test with the starch paste at this point suggests the addition of more hydrogen peroxide and activated charcoal and repetition of

the above procedure until oxidation and adsorption are complete. The presence or absence of iodide having been established, a convenient volume of the remaining filtrate is poured into a test tube, carbon disulfide is added, and the usual test for bromide is made, using aqua regia or other suitable source of free chlorine.

BRUCINE

For microchemical tests, see C-1.

BROMO ACID

See under Lipsticks & Make-up.

C-99—BUTYL AMINOBENZOATE

(*U.S.P.*)

Butyl aminobenzoate melts between 57° and 59° C.

Identification: (a) Add a few drops of an aqueous solution of sodium nitrite (1 in 10) to 2 cc of a solution of butyl aminobenzoate in tenth normal hydrochloric acid (1 in 100), and add to a solution of 0.2 gram of betanaphthol in 10 cc of an aqueous solution of sodium hydroxide (1 in 10); a scarlet red precipitate is produced.

(b) To 1 cc of a solution of butyl aminobenzoate in tenth normal hydrochloric acid (1 in 100) add a few drops of iodine T.S., shake the mixture and allow it to stand for 10 minutes with occasional shaking: a dark brown precipitate is formed which changes into large, reddish brown prisms (under the same conditions, ethyl aminobenzoate gives lustrous scales).

BUTYL AMINOBENZOATE

See also Amino Benzoic Acid, Derivatives of, Determination (C-49).

C-100—CACAO BUTTER, COCOA BUTTER, OIL OF THEOBROMA

(*U.S.P.*)

Solubility—Theobroma Oil is slightly soluble in alcohol, soluble in boiling dehydrated alcohol, and freely soluble in ether and in chloroform.

Melting Point—Theobroma Oil melts between 30°-35° C.

Specific Gravity—The specific gravity of Theobroma Oil is not less than 0.585 and not more than 0.864 at $\frac{100° \text{ C.}}{25° \text{ C.}}$.

Refractive Index—The refractive index of Theobroma Oil is not less than 1.4537 and not more than 1.4578 at 40° C.

Wax, Stearin, or Tallow—Dissolve 1 gram of Theobroma Oil in 3 cc of ether in a test tube at a temperature of 17° C, and immerse the tube in a mixture of ice and water: the solution does not become turbid or deposit white flakes in less than 3 minutes. After the oil has congealed raise the temperature to 15° C: a clear liquid is gradually formed.

C-101—CACAO BUTTER, DETECTION OF FOREIGN FATS IN

(*G. Ghimicescu & G. Kotis. Ann. sci. univ. Jassy* **24**, *91-2, Pt I, 1938*)

Three grams of the sample are dissolved in 6 grams of ethyl ether at room temperature and the mixture is placed in a freezing bath at 0° C. At this temperature no turbidity or crystallization should appear within 7 minutes.

C-102—CALCIUM

(*U.S.P.*)

In neutral or alkaline solutions of calcium salts, ammonium oxalate T.S. produces a white precipitate. This precipitate is insoluble in acetic acid, but dissolves in hydrochloric acid. Calcium salts moistened with hydrochloric acid impart a transient yellowish-red color to a non-luminous flame.

C-103—DETERMINATION OF CALCIUM IN THE PRESENCE OF MAGNESIUM BY STANDARD SOAP SOLUTION

A Rapid Titration Method

(*J. W. Polsky and E. C. Feddern, W. H. & L. D. Betz, Ind. & Eng. Chem.* **14**, *644, August 15, 1942*)

Calcium in water can be determined in the presence of magnesium by direct titration with Clark's soap solution with the addition of ammonium chloride and pH adjustment. Ions common to industrial waters do not interfere. The accuracy and rapidity of this method are equivalent to those of the usual soap titration for total hardness.

PROCEDURE. A 50-ml sample of water is measured into a 0.24 liter (8-ounce) glass-stoppered bottle and neutralized to the phenolphthalein end-point, and 1.0 ml of the ammonium chloride reagent and 2.7 ml of 1 *N* sodium hydroxide are added, bringing the pH of the resulting solution to approximately 11.7. A variation in the pH value of the solution before titration, from 11.7 to 12.0, is allowable without affecting the stability of the end-point or the accuracy of the determination.

The soap solution is then added in small portions from a burette. The bottle is shaken vigorously after each addition, and placed on its side, and the formation of a lather is observed. This procedure is continued until a lather is formed which covers the entire surface of the liquid and lasts for 1 minute. If the test requires more than 7 ml of soap solution, an aliquot portion is diluted to 50 ml with distilled water so that the final end-point will be less than 7 ml.

CALCULATION OF RESULTS. The calcium content of the sample as p.p.m. of calcium carbonate is obtained from the formula

$$\frac{\text{(Ml of soap (titrated) —0.20 ml)} \times 1000 \times 1.14}{\text{No. of ml of sample}} = \text{p.p.m. of Ca as } CaCO_3$$

EFFECT OF IONS. In order to determine whether other ions usually found in industrial water interfere with the test, various amounts of silicate, sulfate, bicarbonate, and iron were added to different samples; they did not noticeably affect the accuracy of the method. Since ammonium chloride is added in the determination, chloride can also be regarded as noninterfering.

C-104—ACID SOLUBLE CALCIUM, IRON, AND ALUMINUM IN POWDERS

(*T.G.A. Method No. 11*)

PROCEDURE

1. Accurately weigh about 5 grams of sample and transfer to a 250 ml beaker. Add 50 ml of *N*/2 hydrochloric acid from a burette, cover the beaker with a watch glass and digest the contents on the steam bath for one-half hour. Observe reaction for effervescence, which indicates presence of *carbonates*.

2. Filter the solution through a tared Gooch crucible and wash the residue thoroughly with hot water. Dry and weigh as test for *solubility*.

3. Add several drops of Methyl Orange indicator to the filtrate and make the solution distinctly ammoniacal by the addition of concentrated ammonium hydroxide. Bring the solution to a boil and allow to stand on the steam bath for one-half hour.

4. Filter through a paper filter and wash the precipitate thoroughly with hot water. Save the filtrate for the determination of *calcium*.

5. Transfer the filter and precipitate to a tared Porcelain Crucible.

6. Heat gently at first over a low flame and finally increase the heat to the full flame of the burner. Ignite to constant weight.

7. Cool in a desiccator and weigh as R_2O_3.

Calculation:

$$\frac{\text{Weight of Precipitate (Step 7)} \times 100}{\text{Weight of Sample (Step 1)}} = R_2O_3 (Fe_2O_3 + Al_2O_3 + SiO_2)$$

8. If the percentage of R_2O_3 is greater than 0.75 percent the precipitate must be purified as follows:

9. Treat the precipitate in the crucible with 3 ml of concentrated hydrochloric acid and 1 ml of concentrated nitric acid. Warm on the steam bath until the precipitate is completely dissolved.

10. Transfer the solution to a 250 ml beaker with the aid of a small volume of water. The final solution should have a volume of 25 to 30 ml. Add 10 ml of 33 1/3 percent sodium hydroxide solution and heat the solution to boiling. Dilute to 150 ml with hot water and allow the precipitate to settle.

11. Filter through a paper filter and wash the precipitate thoroughly with hot water. Transfer the filter and precipitate to a tared porcelain crucible.

12. Heat gently at first over a low flame and finally increase the heat to the full flame of the burner. Ignite to constant weight.

13. Cool in a desiccator and weigh as Fe_2O_3. If the iron oxide appears to be in a reduced condition add 1 or 2 drops of concentrated nitric acid, heat gently to dryness and finally ignite to constant weight.

Calculation:

$$\frac{\text{Weight of Precipitate (Step 13)} \times 100}{\text{Weight of Sample (Step 1)}} = \%\ Fe_2O_3.$$

14. Heat the filtrate and washings from Step 4 to boiling and slowly add while stirring 20 ml of saturated ammonium oxalate solution. Boil for 1 to 2 minutes and heat on a steam bath for one-half hour. Allow to cool and filter at the end of two hours.

15. Wash the filter paper and precipitate with 5 to 10 ml portions of 0.1% ammonium oxalate solution. Transfer the paper and precipitate to a tared platinum crucible and dry and char over a low Bunsen flame. Do not heat sufficiently to inflame the paper. When fully charred increase the heat until the carbon has disappeared. Finally cover the crucible and heat in the full flame of a Meker burner for five minutes.

16. Cool in a desiccator containing sulfuric acid or phosphorous pentoxide (never calcium chloride) and weigh as soon as cool.

Calculation:

$$\frac{\text{Weight of CaO (Step 16)} \times 100}{\text{Weight of Sample (Step 1)}} = \%\ CaO.$$

C-105—CALCIUM CARBONATE PRECIPITATED

(*U.S.P.*)

Assay—Dry about 0.25 gm of precipitated calcium carbonate at 200° C for 4 hours, weigh accurately, dissolve it in a mixture of 10 cc of diluted hydrochloric acid and 10 cc of distilled water in a 250 cc beaker, and boil the solution to expel all carbon dioxide. Add 100 cc of distilled water, heat the mixture to boiling, make the solution alkaline with ammonia T.S. and add with stirring, an excess of hot ammonium oxalate T.S. Heat the mixture on a water bath during 1 hour, filter through hardened filter paper, and wash thoroughly with warm distilled water. Puncture the filter paper, and wash the precipitate into a beaker by means of hot distilled water, followed by 30 cc of dilute sulfuric acid (1 in 3). Heat the solution to 80° C and titrate with tenth normal potassium permanganate. Each cc of tenth normal potassium permanganate is equivalent to 0.005005 gm of $CaCO_3$.

C-106—CALCIUM OXALATE, DETERMINATION OF

(*G. J. W. Ferrey. Quart. J. Pharm. Pharmacol.* **15**, *264-7, 1942. Through C. A.* **37**, *5922, 1943*)

The sample is boiled with 1.4 *N* HNO_3 to destroy color and oxidize Fe, then the pH is adjusted to about 4.5 by adding NH_4 citrate after which the Ca is precipitated by adding $(NH_4)_2C_2O_4$ and weighed as $CaC_2O_4.H_2O$ without first removing Fe.

C-107—CALCIUM PHOSPHATE SALTS, DIFFERENTIATION BETWEEN

(*Apoth. Ztg., through Giorn. Farm. Chim., Oct., 1929*)

If the product is a powder, take 5 mg of the sample and add to 1 cc of water; now add 3 drops of iodo-eosin solution followed by 10 drops of 10 percent hydrochloric acid. If bibasic calcium phosphate is present the red color will disappear; if tribasic, the color will persist.

Take 50 mg of the powder and add to 1 cc of water followed by a few drops of methyl orange test solution. Add tenth normal hydrochloric acid drop by drop; it will take 60 drops to produce a constant red color with the dibasic salt and 120 drops with the tribasic salt.

C-108—CALCIUM PHOSPHATE, TRIBASIC

(*U.S.P.*)

DIBASIC SALT AND CALCIUM OXIDE—Weigh accurately about 2 gm of Tribasic Calcium Phosphate, and dissolve it by warming with 50 cc of normal hydrochloric acid. Cool, add 1 or 2 drops of methyl orange T.S., and slowly titrate the excess of normal hydrochloric acid with normal sodium hydroxide to a yellow color, vigorously shaking the mixture during titration. Not less than 12.5 cc and not more than 13.8 cc of normal hydrochloric acid is consumed for each gm of salt, calculated on a water free basis.

ASSAY—Weigh accurately about 0.2 gm of tribasic calcium phosphate, previously ignited to constant weight,

and dissolve it in a mixture of 25 cc of distilled water and 10 cc of diluted nitric acid. Filter, wash any precipitate, add sufficient ammonia T.S. to the filtrate to produce a slight precipitate, then dissolve the precipitate by the addition of 1 cc of diluted nitric acid. Cool or heat the solution as necessary to about 50° C for 30 minutes, stirring occasionally. Wash the precipitate once or twice with distilled water by decantation, using from 30 to 40 cc each time. Transfer the precipitate to a filter, and wash with cold distilled water until the last washing is not acid to litmus paper. Transfer the precipitate and filter to the precipitating vessel, add 30 cc of normal hydroxide, agitate until the precipitate is dissolved, and then titrate the excess of alkali with half normal sulfuric acid, using 3 drops of phenolphthalein T.S. as the indicator. Each cc of normal sodium hydroxide corresponds to 0.006745 gm of $Ca_3(PO_4)_2$.

C-109—CALCIUM STEARATE

Melting point 150-169° C; ash 8.5-9.5 percent. Insoluble in any of the commonly used solvents.

C-110—CAMPHOR

(*U.S.P.*)

Camphor occurs as colorless or white crystals, granules, or crystalline masses; or, as colorless to white, translucent, tough masses. It has a penetrating, characteristic odor, a pungent, aromatic taste, and is readily pulverizable in the presence of a little alcohol, ether, or chloroform. It slowly volatilizes at ordinary temperatures.

The specific gravity of camphor is about 0.990 at 25° C. Camphor melts between 175° and 179° C, Class II. The specific rotation $\frac{25}{D}$ of natural campor, determined in a solution containing 10 gm of camphor in sufficient alcohol to make 100 cc and using a 200-mm tube, is between 41° and 43°. (See also C-4.)

C-111—CAMPHOR

Bohrisch, Reactions For

(*Merck Index*)

Cautiously heat 0.05 gm camphor with 1 cc vanillin-HCl (gm vanillin in 100 cc 25 percent HCl). At first a rose-red color develops which changes to bluish-green at 75-100°.

Treat 0.1 gm camphor with 10 drops of a cold mixture of equal volumes of H_2SO_4 and vanillin-HCl. After ½-1 hour natural camphor shows a dirty green color which changes to a pure dark green in another hour; after 7-8 hours the color becomes indigo blue. Synthetic camphor does not give these color reactions.

C-112—CAMPHOR

Bailey Test for Differentiating Natural and Synthetic Camphors

(*Merck Index*)

Dissolve a small crystal or flake of the camphor in alcohol and evaporate a drop of this solution on a slide. In polarized light, natural camphor shows beatutiful colors, while synthetic camphor does not.

C-113—CAMPHOR, MENTHOL AND METHYL SALICYLATE, DETERMINATION OF, IN MIXTURES

(*K. K. Anderson. Dansk Tidss. Farm.* **11**, *208, 1938*)

A correction must be applied to the determination of camphor by the dinitrophenylhydrazine method, which corrections are listed. Menthol is determined on the ethereal extract of a steam distillate, by acetylating. Methyl salicylate by saponifying the ethereal extract, and then brominating the salicylic acid. Camphor by the dinitrophenylhydrazine method.

C-114—CANTHARIDES

(*N.F.*)

The active ingredient of cantharides is cantharidin. For the assay of the cantharides, see N. F. VII, page 79.

C-115—DETERMINATION OF CANTHARIDIN

(*H. W. Van Urk Ph. Wkbl.*, **66**, *1929, 15*)

The author suggests the use of either p-dimethylamidobenzaldehyde or the reduction of the resulting nitro-compound to an amido compound, followed by Azo-color reaction, as follows:

Azo-color reaction: To the substance containing cantharidin, add 5 cc of 50 percent HNO_3 and evaporate on water bath. To the residue add 2 drops of freshly made solution of stannous chloride in strong HCl, reduced by warming on water bath for 2 or 3 minutes. When cool, add a few drops of 1 percent sodium nitrite solution and remove the excess of nitrite after a few minutes with a little urea (careful evaporation). Then add a freshly made 1 percent solution of a-naphthol in 10 percent ammonia, when a clear, violet red color will show upon which a suitable quantitative color reaction can be based.

With p-dimethylamidobenzaldehyde: evaporate as above from the nitric acid and add 10 drops of a 1 percent solution of p-dimethylamidobenzaldehyde in dilute alcohol to which enough dilute sulfuric acid has been added to be 2 percent acid concentration and evaporate on water bath. If cantharidin is present, the residue will be of a yellowish red color and, if water is added to this, a yellow precipitate will form. If a large amount of cantharidin is present, the color reaction will show directly upon addition of the reagent. (*Through The Druggists Circular, p. 46, Oct., 1929.*)

C-116—CANTHARIDIN, A NEW MICROCHEMICAL REACTION FOR

(*G. Deniges, Bull. Trav. Soc. Pharmac., Bordeaux* **73**, *7, 1935 Through Pharm. Zent.* **76**, *707, 1935*)

A fraction of a milligram of the sample with a drop of concentrated ammonia water is allowed to carefully dry on a glass slide. The slide is then examined under the microscope whereupon the characteristic crystals of ammonium cantharidate may be seen. These are described as long pyramids with quadrangular bases which are of about the same length and breadth. In some cases also hexagonally appearing leaflets, and crystals with a needle-like projection are seen. (*Through Am. J. Pharm.* **107**, *551, 1935.*)

C-117—CARBONATE

(*U.S.P.*)

Carbonates or bicarbonates effervesce with acids, yielding a colorless gas, which then passed into calcium hydroxide T.S. produces an immediate precipitate. A cold aqueous solution of a soluble carbonate is colored red by phenolphthalein T.S., while a similar solution of bicarbonate remains unchanged or is only slightly colored.

C-117-a—DETERMINATION OF CARBON DIOXIDE

Weckesser's Modified Chittick Method
Used at C. E. Jamieson Co.

Apparatus

The principal parts of the apparatus are:

1 standard 2-liter wide mouth balloon flask, serving as the reaction flask.
1 ring stand.
1 Universal clamp, holding the flask at the neck.
1 Centigrade thermometer.
1 rubber stopper to fit the flask, with one hole bored for the delivery tube and one for the thermometer; another hole is bored partially through to hold the sample container.
1 right angle bend glass delivery tube.
1 piece of heavy walled rubber tubing 3/16 in. I.D. and approximately 12 inches long.
1 sample holder made by fusing the end of a test tube to a piece of glass tubing or rod, as shown in the drawing. 1 manometer stand as shown in the drawing.
1 open end manometer made by bending a piece of glass tubing 6 mm. I.D. and approximately 30 inches long into the shape of an elongated U, so that the section of meter stick will just fit inside. This is mounted at a 45° angle.
1 section of meter stick about 35 cm. long, mounted at a 45° angle.
Mercury to fill the manometer to about 15 cm. in each leg of the manometer.

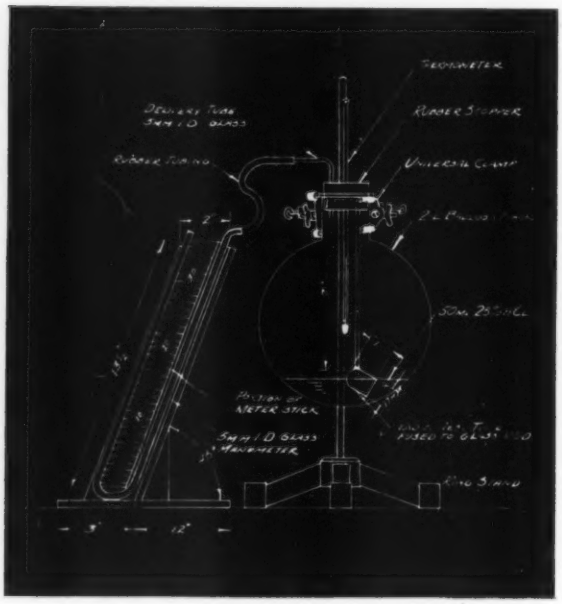

Figure 123. Chittick Apparatus

Before setting up the apparatus, the rubber stopper is inserted at the neck of the reaction flask and a mark made on the neck of the flask at the point where the bottom of the stopper shows through the glass. The stopper is then removed and the capacity of the flask up to the mark is accurately determined. The volume capacity of the rubber tubing is determined by filling it with water and draining into a graduated cylinder. The volume of the glass tubing from the rubber tube to the mercury is determined by measuring the volume of an equal length of tubing of the same inside diameter. The volume capacity of the rubber tube and the glass tube will be found to be very small in comparison with the volume of the flask, and for rough work it can be neglected.

Theory

The theory on the whole is quite simple. The manometer measures directly the increase in pressure within the reaction flask. Since the volume displacement of mercury in the manometer is practically negligible, the reaction can be considered as being carried out at constant volume. The difference in height of the 2 columns of mercury in the manometer is, therefore, the partial pressure of CO_2 in centimeters of mercury. The barometric pressure of the atmosphere has no effect upon the determination. This can be shown by analyzing the forces which are at work inside and out of the apparatus. At the beginning of the experiment, before CO_2 is evolved, on the outside of the apparatus we have the barometric pressure which is made up of air and the water vapor which it holds. Let us call this P_o = pair plus $p(H_2O)_1$. The pressure inside is P_1 = pair plus $p(H_2O)_2$. In both cases pair is the same. The only difference is the difference between the aqueous tension of the air and that of the 25 percent solution of hydrochloric acid. This difference for average atmospheric condition is small. Adjustment, however, is made for this by taking a zero reading of the manometer with the apparatus closed. After the CO_2 has been evolved, the pressure inside has increased by a pressure $p(CO_2)$ which is read by the change in the manometer. Since the $v(CO_2)$, the volume of the gas, is directly proportional to p, the pressure, the volume and the CO_2 evolved will occupy at normal conditions v_o (O° C and 760 mm).

$$V_o = \frac{p(CO_2)}{760} \times v_f \times \frac{273}{T} \qquad (1)$$

Where T is the absolute temperature in the reaction flask at the time of measurement and v_f is the volume of the flask. Since the partial pressure is low, the gas can be assumed to follow the ideal gas law, namely, $p \times v = n \times R \times T$. (R = gas constant.)

In reading $p(CO_2)$ at the manometer instead of reading the difference in the height of the columns before and after the evolution of the CO_2, and initial r_o and the final r, of the left column was taken. Calling this value $r = (r_1 - r_o)$ then $2r$ = total change in the height of the column. Since the manometer is inclined at 45°

$$\frac{2r = p(CO_2) \text{ in cm}}{1.414} = \frac{20r}{1.414} \text{ mm} \qquad (2)$$

Substituting (2) in (1)

$$v_o = \frac{\frac{20r\, v_f}{1.414}}{760} \times \frac{273}{T} \text{ cc} \qquad (3)$$

Since the weight, W, of the gas is equal to $\frac{v_o}{22{,}400} \times M$

where M is molecular weight of CO_2. Substituting (3) in (4), we have

$$W = \frac{20r\ v_t \times 273 \times 44}{1.414 \times 760 \times 22{,}400 \times T} \quad (4)$$

Calling S the weight of the sample, $W \times \frac{100}{S} = P$, the percentage of CO_2 in the sample

$$P = \frac{20r \times v_t \times 273 \times 44 \times 100}{1.414 \times 760 \times 22{,}400 \times S \times T} \quad (5)$$

The method can also be used for the determination of the weight of many gas evolving substances, present in a sample, by substituting the formula weight of that substance in 4, which evolves one mole of gas.

Procedure

Before making a determination with the apparatus, 50 cc of approximately 25 percent solution of hydrochloric acid is put into a reaction flask. The 25 percent solution of hydrochloric acid can be approximated by taking 30 parts of reagent hydrochloric acid and 20 parts of water. A pinch of sodium bicarbonate is added to the solution to saturate it with carbon dioxide.

When the inside of the flask has come to room temperature an initial reading is made of the left column of the manometer. The weighed sample is introduced into the glass cup and then into the flask while the flask is held in a horizontal position. Then the stopper is in place, the tube connecting the manometer is fit into place. The flask is swung into a vertical position, allowing the hydrochloric acid solution to come in contact with the sample. About a minute is allowed for an equilibrium to be established, and for the temperature to return to the same degree as when the sample was inserted. The final reading of the manometer is then taken.

After each determination the glass cup is rinsed with water and then with Methanol, and dried with a piece of absorbent gauze. Quite a number of determinations can be made with the same 50 cc solution of hydrochloric acid.

Calculations

In the apparatus used in our laboratory the volume capacity of the flask, rubber tube and glass tube combined is 2152 cc. Subtracting the volume occupied by the 50 cc of hydrochloric acid solution, $V_t = 2102$.
Substituting in (5)

$$P = \frac{20r \times 2102 \times 44 \times 100 \times 273}{1.414 \times 760 \times 22412 \times S \times T}$$

$$P = \frac{r \times 2092}{S \times T} \quad (6)$$

Example:

Analysis of Effervescent Salts, run in duplicate.

	No. 1	No. 2
Sample Weight	1.000 gm	.9986 gm
Initial Reading	14.2	14.2
Final Reading	17.6	17.6
Temperature	25° C	26° C
Absolute Temperature (T) = 273 plus C	298	299
	17.6 —14.2 = 3.4	17.6 —14.2 = 3.4

Applying formula (6)

$$\text{No. 1 } P = \frac{3.4 \times 2092}{1.000 \times 298} = 23.86\%\ CO_2 \text{ in sample}$$

$$\text{No. 2 } P = \frac{3.4 \times 2092}{.9986 \times 299} = 23.82\%\ CO_2 \text{ in sample}$$

C-118—TENTATIVE METHOD FOR CARBONIZABLE SUBSTANCES IN PETROLEUM WAX

(T.G.A. Method No. 5-A)

Place in a glass-stoppered test tube (Note), which has been previously cleaned with sulfuric acid dichromate solution, rinsed with distilled water, and dried, 5 cc petroleum wax at a temperature just above the melting point and 5 cc of sulfuric acid containing 94.5 percent to 94.9 per cent H_2SO_4. Heat in a water bath at 70° C for ten minutes. After the test tube has been in the water bath for five minutes, remove it quickly, hold with a finger over the stopper, and give three vigorous, vertical shakes over an amplitude of about five inches. Shake quickly and at a rate corresponding to five shakes per second. Repeat every minute. Do not keep the test tube out of the bath longer than three seconds for each shaking period.

At the end of ten minutes from the time it was first placed in the bath, remove the test tube. The acid does not become darker than the standard color produced by mixing in a similar glass-stoppered test tube 3 cc ferric chloride T.S., 1.5 cc cobaltous chloride T.S., and 0.5 cc cupric sulfate T.S., this mixed fluid being overlaid with 5 cc liquid petrolatum. If the acid remains trapped in the wax, color of the resulting emulsion does not become darker than a similar emulsion produced by shaking the colorimetric standard solution with liquid petrolatum.

Note: Glass stoppered test tube for carbonizable substances in petroleum wax and liquid petrolatum.

A test tube of heat-resistant glass fitted with a well-ground glass stopper, the stopper and the tube bearing identical and indestructible numbers. The tube shall be 140 ± 3 mm in length and 14 ± 1 mm in diameter and shall be calibrated at the 5-ml and 10-ml liquid levels. The capacity of the tube with stopper inserted shall be 16 ± 1.0-ml. A rolled edge may be provided for suspending the tube on the cover of the water bath.

C-119—CASTOR OIL

(U.S.P.)

Solubility: Castor oil is soluble in alcohol and is miscible with dehydrated alcohol and with glacial acetic acid, chloroform and ether.

Distinction from most other fixed oils: Castor oil is only partly soluble in purified benzin (most other fixed oils), but it yields a clear liquid with an equal volume of alcohol (foreign fixed oils).

C-120—CASTOR OIL

Saponify about 10 gm of the questionable material with alcoholic potassium hydroxide. Evaporate the saponified mass to dryness, in an evaporating dish. Add about 7 to 8 gm of potassium hydroxide pellets, heat slowly and stir

continuously. Stop heating when the mass begins to smoke. Cover with a watch glass and when cool, smell the contents on the bottom of the dish. A strong odor of octyl alcohol would be noticeable if as little as 5 per cent castor oil is present in the mass.

C-121—ANALYSIS OF CELLULOSE DERIVATIVES

Total Acyl in Cellulose Organic Esters by Saponification in Solution

(C. J. Malm, L. B. Genung, R. F. Williams, Jr. & M. A. Pile. Ind. & Eng. Chem. Anal. Ed. **16,** *502, 1944)*

Procedure: The more common cellulose lower fatty acid esters have been divided into the following groups, based on their solubility differences, and variations made in the procedure to meet the requirements of each:

Group. I. Solvent-soluble cellulose acetates having about 15 to 30 percent acetyl, which require water in the solvent mixture to effect solution of the sample. These solutions tolerate a considerable amount of water during saponification.

Group II. Cellulose acetates having 30 to 44.8 percent acetyl, most cellulose acetate propionates and acetate butyrates having less than 30 percent propionyl or butyryl, and similar esters whose solutions will tolerate some water.

Group III. Cellulose propionates, butyrates, acetate propionates, acetate butyrates, etc., having 30 to 45 percent propionyl or butyryl, which are very water-resistant, and the solutions of which tolerate little water.

Group IV. Cellulose propionates, butyrates, and mixed esters having more than 45 percent propionyl or butyryl whose solutions will tolerate practically no water.

The samples are dried about 2 hours at 100° to 110° C, cooled in a desiccator, and accurately weighed into 250-ml glass-stoppered Erlenmeyer flasks. Each sample is dissolved in a solvent mixture which meets the following requirements: It must not react with the alkali, must tolerate the addition of considerable amounts of water, preferably should be a solvent for a wide range of cellulose esters, and the resulting system must be a solvent for the alkali. Blanks are run on each solvent combination used, and are carried through all steps of the manipulations.

Group I. A 1-gram sample is dissolved in 50 ml of the solvent mixture. In the case of cellulose acetates in the lower acetyl range of this group a 2:1:1 by volume mixture of water, pyridine, and acetone is recommended, while in the upper acetyl range of this group the same solvents in a ratio of 1:1:1 are suggested. During saponification 70 ml of water (making a total of 120 ml of added solvent) and 30 ml of 0.5 *N* alkali are added. The distilled water is added to the solution with vigorous shaking until a temporary precipitate is observed at the point where the water first comes in contact with the solution or until the entire 70 ml have been added. A 15-ml portion of alkali is added, or alkali is added until a temporary precipitate forms. Then the remainder if any, of the 70 ml of water is added and the flask shaken until the solution becomes turbid. Finally alkali is added to give a total of 30 ml. The flasks are stoppered and allowed to stand at room temperature for 6 hours or more.

Group II. A 0.5-gram sample is dissolved in 50 ml of a 1:1 by volume mixture of pyridine and acetone. A 20-ml portion of distilled water and 10 ml of 0.5 *N* alkali are added with swirling, which is continued until a slight turbidity appears. Then the remaining 50 ml of distilled water and 20 ml of alkali are added. Six hours or more at room temperature are allowed for saponification.

Group III. A 0.5-gram sample is dissolved in 100 ml of a 1:1 by volume mixture of acetone and methyl alcohol. A 10-ml portion of 0.5 *N* alkali is added slowly with swirling, until a definite turbidity develops. The remaining 20 ml of alkali and 20 ml of water are then added slowly. Six hours or preferably overnight at room temperature must be allowed for saponification.

Group IV. A 0.5-gram sample is dissolved in 100 ml of a 1:1 by volume mixture of pyridine and methyl alcohol. A 30-ml portion of 0.5 *N* methyl-alcoholic alkali is added slowly with swirling. A 20-ml portion of water is added slowly and the flask swirled until the solution becomes turbid, so that the regenerated cellulose will settle in a finely divided form. The flasks are allowed to stand overnight at room temperature for completion of saponification.

In all cases, the excess of alkali is back-titrated using standard 0.5 *N* hydrochloric acid and phenolphthalein indicator.

The result may be calculated as follows:

$$\frac{\left[\begin{pmatrix}\text{Ml of HCl for}\\ \text{blank}\end{pmatrix} - \begin{pmatrix}\text{Ml of HCl for}\\ \text{sample}\end{pmatrix}\right] \times \text{HCl normality} \times 4.3 = \%\ \text{apparent acetyl}}{\text{sample weight}}$$

Table 21 (See: C-123)

Reagent	Promulsin	Cellofas WEZ	Cellofas WLD	P.M.B. 444	Tylose SL 400	Tylose SL 1000
Acriflavine 2%	+++	. . .	. . .	. . .	. . .	. . .
Benzoic Acid 1/1000	. . .	. . .	. . .	. . .	. . .	. . .
Borax 3%	. . .	. . .	. . .	. . .	. . .	. . .
Boric Acid 3%	. . .	. . .	. . .	. . .	. . .	. . .
Copper Sulf. 2%	. . .	+++	. . .	+++	. . .	. . .
Glycerin	. . .	. . .	. . .	. . .	. . .	. . .
Magnesium Sulfate 50%	. . .	. . .	+++	. . .	+++	+++
p-chloro-m-xylenol 1/3500	. . .	. . .	. . .	. . .	. . .	. . .
Phenylmercuric nitrate 1/1000	. . .	++	+	++	+	+
Sodium Chloride 18%	. . .	. . .	. . .	. . .	. . .	. . .
Tannic Acid 5%	. . .	. . .	+++	. . .	+++	+++
Zinc Sulfate 10%	. . .	. . .	. . .	. . .	. . .	. . .
Phenol 5%	. . .	. . .	++	. . .	+++	+++

Cellofas WFZ and P.M.B. 444 have similar reactions.
Cellofas WLD produces a less voluminous precipitate with 5% phenol than Tylose S.L. 400.
No way to differentiate between Tylose S.L. 400 and S.L. 1000.
Promulsin is the only cellulose derivative precipitated by 2% acriflavine soln.

This result is given in terms of percent acetyl in the case of cellulose acetate and as apparent acetyl (saponification value calculated as acetyl) in the case of other esters.

C-122—NEW MICROCHEMICAL STAIN FOR CELLULOSE

Apply to the specimen 2-3 drops of a 2 percent solution of iodine, in 5 percent potassium iodide solution, diluted with 9 volumes of water and containing 0.28 percent of glycerin. Blot with filter-paper, and dry as completely as possible. Apply 1 drop of a saturated solution of lithium chloride in water, and cover the specimen. After 5 minutes cellulose gives a light blue color. The stain is suitable for plant histology. (*E. E. Post and J. D. Laudermilk. Stain Technol.*, **17**, *21, 1942; Tech. Bull. Paper Makers' Assoc.*, **20**, *6, 1943.*)

C-123—CELLULOSE DERIVATIVE, REACTIONS OF THE

(*W. Swallow and T. D. Whittet, Pharm. J.*, **148**, *107, 1942 and* **150**, *139, 1943*)

In using the water soluble cellulose derivatives available in Britain as suspending and emulsifying agents, experiments showed incompatibilities which led the authors to make a series of tests with various reagents, as shown in the table 21, page 116. Records of positive results have been graded from + representing a slight delayed precipitate, to +++ a voluminous or immediate precipitate.

C-124—CHLORATE

(*U.S.P.*)

Solutions of chlorates yield no precipitate with silver nitrate T.S. The addition of sulfurous acid to this mixture produces a white precipitate which is insoluble in nitric acid but soluble in ammonia T.S. Upon ignition, chlorates yield chlorides, recognizable by appropriate tests. When concentrated sulfuric acid is added to a dry chlorate, decrepitation occurs and a greenish-yellow gas is evolved. Caution: Only a small amount of chlorate should be used for this test and extreme caution must be exercised in performing it.

C-125—CHLORIDE

(*U.S.P.*)

Solutions of chlorides yield a white, curdy precipitate with silver nitrate T.S., which is insoluble in nitric acid, but dissolves in a slight excess of ammonia T.S. When testing alkaloidal hydrochlorides, the mixture, after the addition of ammonia, is filtered and the filtrate acidified with nitric acid. Solutions of chlorides when warmed with potassium permanganate and diluted sulfuric acid evolve the characteristic odor of chlorine.

C-126—CHLORIDE

(*A.O.C.S.*)

Neutralize with chlorine-free alkali the acid water obtained in C—. Titrate with standard silver nitrate solution, using potassium chromate as indicator, and calculate the result to sodium chloride or potassium chloride as the character of the soap indicates.

In case the total anhydrous soap is not to be determined it will be more convenient to use the following method. Dissolve 5 gm (±0.1 gm) of the sample in 300 cc of water, boiling if necessary to effect solution. Add an excess of neutral, chlorine-free magnesium nitrate solution (about 25 cc of a 20 percent Mg $(NO_3)_2.6H_2O$ solution). Without cooling or filtering, titrate with standard silver nitrate solution, using potassium chromate as indicator.

C-127—CHOLESTEROL

(*N.F.*)

Identification: A solution of cholesterol in boiling alcohol (1 in 20) filtered while hot, and the filtrate allowed to cool, slowly forms crystals visible under a microscope as thin, transparent rhombic plates.

Identification: Dissolve a few mg of cholesterol in 2 cc of chloroform, add 20 drops of acetic anhydride and a single drop of sulfuric acid; a pink color is developed in the solution, which rapidly changes to red, then blue, and finally a brilliant green, the last color persisting for some time.

C-128—CHOLESTEROL

Burchard Test For

A solution of cholesterol in chloroform turns to a violet-red color upon the addition of a few cc of acetic anhydride followed by a few drops of sulfuric acid. The acid layer develops a greenish fluorescence.

C-129—CHOLESTEROL, ESTIMATION OF

(*M. I. Shepherd, Drug & Cosm. Ind.* **39**, *453, 1936*)

A simple colorimetric method for the estimation of total cholesterol in lanolin and absorption bases.

Preliminary to the actual determination, prepare a "permanent" color standard against which the color of the sample undergoing analysis may be compared. For this, in common with the recommendation of some biochemists, a solution in water of betanaphthol green B is satisfactory. Dissolve 1 gram of betanaphthol green B in 1 liter of distilled water. This solution keeps indefinitely if it is stored in a dark colored glass bottle and sealed with paraffin around the stopper. One cubic centimeter of this solution is diluted with exactly sixteen cubic centimeters of distilled water making seventeen cubic centimeters of "color standard."

Much annoyance is experienced in the determination when the sample, as in the case of hydrated lanolin, carries considerable water. Any way of removing the water from the sample should precede the determination; and an excellent manner of accomplishing this is merely to mix the sample with Plaster of Paris and then dry the mixture in a heated oven.

Weigh out exactly 150 milligrams of lanolin. Mix it with a small quantity of Plaster of Paris from 10 to 20 grams. It is not necessary to weigh the Plaster of Paris. Place the mixture in an oven kept at around 105° C for ½ to ¾ hour, and allow the dry mixture to cool. Transfer it to the thimble of any ordinary extraction apparatus, such as a Thorn or a Soxhlet.

Place about 25 cubic centimeters of chloroform ,preferably anhydrous, in the extraction flask and extract for ½ hour. Allow the chloroform extract to cool and transfer it to a 200 cc volumetric flask. Make the solution up to exactly 200 cubic centimeters with chloroform.

Place exactly 5 cubic centimeters of the solution in a ten cc cylinder graduate. Add 2 cubic centimeters of acetic anhydride and as quickly as possible thereafter add 0.1 cc of sulfuric acid. Shake thoroughly to insure intimate mixing and place the cylinder in a dark closet to allow

the color to develop.

Match the color in a Hellige colorimeter against the dye standard previously mentioned.

The following table gives the approximate number of milligrams of cholesterol contained in the five cubic centimeters of the sample matched.

TABLE 22

Reading	Mgms in 5 cc	Reading	Mgms in 5 cc	Reading	Mgms in 5 cc
15	0.74	35	0.57	55	0.40
16	0.73	36	0.56	56	0.40
17	0.72	37	0.55	57	0.39
18	0.71	38	0.55	58	0.38
19	0.70	39	0.54	59	0.37
20	0.69	40	0.53	60	0.36
21	0.69	41	0.52	61	0.35
22	0.68	42	0.51	62	0.35
23	0.67	43	0.50	63	0.34
24	0.66	44	0.50	64	0.33
25	0.65	45	0.49	65	0.32
26	0.65	46	0.48	66	0.31
27	0.64	47	0.47	67	0.30
28	0.63	48	0.46	68	0.30
29	0.62	49	0.45	69	0.29
30	0.61	50	0.45	70	0.28
31	0.60	51	0.44	71	0.27
32	0.59	52	0.43	72	0.26
33	0.58	53	0.42	73	0.25
34	0.58	54	0.41	74	0.24

From this table it is an easy matter to calculate the percent of cholesterol in the original sample. Multiply the value found in the table by 40 (to have the number of milligrams of cholesterol in the 200 cc of extract dilution). Divide this figure by 150 (the number of milligrams of original material used and contained in the 200 cc) and multiply by 100 to convert to percentage.

For example; the colorimeter reading is found to be 58. This corresponds to 0.38 milligrams of cholesterol, according to the table opposite the figure 58.0.38 times 40 = 142; the number of milligrams of cholesterol in 150 milligrams of sample. 142/150 times 100 = 9.5. The sample shows 9.5 percent of cholesterol.

Occasionally samples of absorption bases will be met that show as little as 2 or 3 percent of cholesterol. In this case, the analysis will have to be made either with more material, say 750 instead of 150 milligrams of sample; or, if 150 milligrams are used, the chloroform extract should be made up to 100 cubic centimeters or less.

This method does not distinguish between cholesterol in the free state and cholesterol esters. It measures total cholesterol, with which our researches have been mainly concerned.

C-130—CHOLESTEROL, COLORIMETRIC DETERMINATION

*(Warren M. Sperry and Florence C. Brand, J. Biol. Chem. **150**, 315-24, 1943)*

Refinements and improvements are proposed to avoid errors in current directions for the Liebermann-Burchard procedure. Esterified cholesterol must be saponified, because it develops more color at a faster rate than free cholesterol. Extraneous colors can be avoided by mild conditions for saponification and a weak acid (acetic) for acidification and by extraction from a water-alcohol solution of the acidified residue. The Ac_2O and H_2SO_4 should be mixed beforehand. The color reaches a maximum in about 15 minutes and then fades, so the temperature and a time of reading must be selected to be at the maximum; and a standard is required for each unknown. *(Thru C. A. **38**, 391, 1944.)*

(Chapter IV continues in subsequent issue.)

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